		Dayes	ORIGINAL	<u> </u>
	H1845	0058618	SDR #:F02 Revision #: Date Initiated:7	2-001 0 /29/02
SAMPLE SAMPLE	DISPOSITION	N RECORD		
SAF: F02-009				
OU: N/A	•		- 1 <del>2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 </del>	
Project ID: CPP 200 Area				
Task ID: 1				· ·
Sampling Event: ModuTank Monitoring	·			
Laboratory: Eberline				
Task Manager: CS Wright				
Sampling Information:				
Number of Samples: 1				
ID Numbers: B153H3				
Matrix: WATER				
Collection Date: 7/25/02				
Issue Background:				
Class: Project Data Use General Labora  Direction	tory 🗌 Validation		le Management Direction	
Type: Chain of Custody Problem				
Description: Chain of Custody Missing	Sample Date/	lime .		
Disposition:				
Description: The sample date and time sample. Based on sampling information date and time should be "7/25/02 10:55 A	listed in the s AM".	samplers' logbo	ok, the correct sam	ıple
Justification: Sampling date/times are re Groundwater Protection Program will evuse.				
Approval Signatures:				
SJ Trent			8/20/02	
Project Coordinator (Print/Sign Name)	· · · · · · · · · · · · · · · · · · ·		Date	
COMMITTE / // //			8/2/10	
CS Wright // // // Task Manager (Print/Sign Name)			Date	<del></del> .
rask manager (r minosym manie)	<b>即居代</b>	EINGM	Date	
	MAL	2 9 2003		
		~ 4 AAA (		

EDMC



6 September 2002

Mr. Steve Trent Fluor Hanford Inc. 825 Jadwin Ave. Richland, WA 99352

Subject: Contract No. 630

**Analytical Data Package** 

Dear Mr. Trent:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0207L262
SDG#	H1845
SAF#	F02-009
Date Received	7-26-02
# Samples	7
Matrix	Water
Volatiles	X
Semivolatiles	Χ
Pest/PCB	X
Herbicide	X
GRO	
Metals	Χ
Inorganics	



The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,

Ljonville Laporatory Incorporated

Orlette S. Johnson Project Manager

# Lionville Laboratory, Inc. VOA ANALYTICAL DATA PACKAGE FOR TNUHANFORD F02-009 H1845

RFW LOT # :0207L262

CLIENT	ID	ŖĐ	₩ #	MTX	PREP #	COLLECTN	DATE REC	EXT/PREP	ANALYSIS
				<del></del>					
B153F8	•	0.0	1	W	02LVH324	07/25/02	07/26/02	N/A	08/07/02
B153F9		. 00	2	W	02LVH324	07/25/02	07/26/02	N/A	08/07/02
в153н0		0.0	3	W	02LVH324	07/25/02	07/26/02	N/A	08/07/02
в153н1		0.0	4	W .	02LVH324	07/25/02	07/26/02	N/A	08/07/02
B153H2		0.0	5	M	02LVH324	07/25/02	07/26/02	N/A	08/07/02
в153н3		00	6	. <b>W</b> . 1	02LVH324	07/25/02	07/26/02	N/A	08/07/02
B153H4		0.0	7	W	02LVH327	07/25/02	07/26/02	N/A	08/08/02
B153H4		00	7 MS	W	02LVH327	07/25/02	07/26/02	N/A	08/08/02
в153н4		00	7 MSD	W	02LVH327	07/25/02	07/26/02	N/A	08/08/02
LAB QC:						.·			
					: .	•			
VBLKHE		ME	31	W	02LVH324	N/A	Ń/A	N/A	08/07/02
VBLKHE		ME	1 BS	W	02LVH324	N/A	N/A	N/A	08/07/02
VBLKJS	· · · · · · · · · · · · · · · · · · ·	M	31	W	02LVH327	N/A	N/A	N/A	08/08/02
VBLKJS	· .	ME	B1 BS	M	02LVH327	N/A	N/A	N/A	08/08/02

80 800 D





Client: TNU-HANFORD F02-009

LVL#: 0207L262

SDG/SAF #: H1845/F02-009

**W.O.** #: 11343-606-001-9999-00 **Date Received:** 07-26-2002

#### GC/MS VOLATILE

Seven (7) water samples were collected on 07-25-2002.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260B for TCL volatile target compounds on 08-07,08-2002.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- All results presented in this report are derived from samples that met LvLI's sample acceptance 1.
- 2. Samples were analyzed within required holding time.
- Non-target compounds were detected in the samples. 3.
- Eight (8) of thirty-nine (39) surrogate recoveries were outside EPA QC limits. All out of criteria 4. surrogate recoveries of Bromofluorobenzene were biased slightly low; however, there was no significant impact on the data. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 5. All matrix spike recoveries were within EPA QC limits.
- All blank spike recoveries were within EPA QC limits. 6.
- Internal standard area and retention time criteria were met. 7.
- Manual integrations are performed according to OP L-QA-125 to produce quality data with the 8. utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual" Integration").
- 9. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

President

Lionville Laboratory Incorporated

som\group\data\voa\tnu-hanford\0207-262.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 2 8 pages. 02

Lionville Laboratory Sample Discrepancy Report (SDR) SDR #: (CONTING)
Initiator: Puchak Batch: 201262 Parameter: Coll Matrix: Matrix: Method: Sw846MCAWW/CLP/ Prep Batch: Pr
1. Reason for SDR a. COC Discrepancy _ Tech Profile Error _ Client Request _ Sampler Error on C-O-C _ Transcription Error _ Wrong Test Code _ Other_ b. General Discrepancy _ Missing Sample/Extract _ Container Broken _ Wrong Sample Pulled _ Label ID's Illegible _ Hold Time Exceeded _ Insufficient Sample _ Preservation Wrong _ Received Past Hold _ Improper Bottle Type _ Not Amenable to Analysis _ Note*: Verified by [Log-In] or [Prep Group] (circle)signature/date: c. Problem (Include all relevant specific results; attach data if necessary) = Freches _ Container Broken _ Co
3. Discussion and Proposed Action  Re-log Entire Batch Following Samples: Re-leach  Re-leach  Other Description:  Reviewing Control Charts  Jooz Control Chart
Re-extract Re-digest Revise EDD Change Test Code to Place On/Take Off Hold (circle)
4. Project Manager Instructionssignature/date: // // // // // // // // // // // // //
5. Final Actionsignature/date:
When Final Action has been recorded, forward original to QA Specialist for distribution and filing.
Route Distribution of Completed SDR  X Initiator X Lab General Manager M. Taylor X Project Mgr: Stone Johnson/Haslett X Technical Mgr: Wesson/Daniels X QA (file): Alberts Data Management: Feldman Sample Prep: Beegle/Kiger  Route Distribution of Completed SDR Metals: Beegle Inorganic: Perrone GC/LC: Kiger MS: Rychlak/Layman Log-in: Melnic Admin: Soos Other:

#### **GLOSSARY OF VOA DATA**

### DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 31.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- 1 = Interference.
- NO = Result qualitatively confirmed but not able to quantify.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.



# **GLOSSARY OF VOA DATA**

# **ABBREVIATIONS**

BS =	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions
	and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP, Z = Indicates Spiked Compound.



# TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quantitation modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quantitation modifications:

- MP Missed Peak: manually added peak not found by automatic quantitation program.
- PA Peak Assignment: quantitation report was changed to reflect correct peak assignment.
- RI Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.



L-WI-035/a-mi-10/00

Lionville Laboratory, Inc.

Volatiles by GC/MS, HSL List Report Date: 08
Client: TNUHANFORD F02-009 H1845 Work Order: 11343606001 Page: la Report Date: 08/27/02 12:00 RFW Batch Number: 0207L262

Cust ID:	B153F8	B153F9	в153н0	B153H1	В153Н2	в153н3
Sample RFW#: Information Matrix:	001 WATER	002 WATER	003 WATER	004 WATER	005 WATER	006 WATER
D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Gilleb.	~3 <i>,</i> ~			•	en e	
Toluene-d8	96 %	98 %	97 %	97 %	96 %	98 %
Surrogate Bromofluorobenzene	79 * %	78 * %	. 77 * %	77 * %	76 * %	79 * %
Recovery 1,2-Dichloroethane-d4	88 %	90 %	91 %	87 %	90 %	90 %
		=====f1===	=====fl=	======fl=	======f <u>l</u>	_=====================================
Chloromethane	10 ປັ	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U	10 U	10 U	√10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	11	10	5 U	5 U	5 U	13
Acetone	1.0 U	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	5 U	5 U	5 U	-5 U	5 U	5 U
1,2-Dichloroethene (total)	5 ប	5 U	5 U	5 U	5 U	5 U
Chloroform	5 Ü	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5 U	5 U	5 ปั	5 U	5 U	5 U
2-Butanone	10 U	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	5 U	5 U	√5 ປັ	5 U	5 U	5 U
1,2-Dichloropropane	5 U	5 Ü	5 U	5 Џ	5 U	5 U
cis-1,3-Dichloropropene	5 U	5 U	5 U	, 5 Ū	5 Ü	. 5 U
Trichloroethene	5 U	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	5 U	, 5 Ü	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	5 U	5 U	5 U	5 U	5 U	5 U
Trans-1,3-Dichloropropene	, 5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	5 U	5 U	5 U	5 Ü	5 U	. 5 บ
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	3 .0	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	5 U	5 Ü	5 U	5 U	5 U
Toluene	5 U	5 U	5 U	5 U	5 U	5 U
*= Outside of EPA CLP QC limits.						

RFW Batch Number: 020	)7 <b>L262</b> Clie	ent: TNUHANFORD	F02-009 H1845	Work Order:	11343606001	Page: 1b	
	Cust ID:	B153F8	B153F9	B153H0	B153H1	B153H2	В153Н3
						6	$\Diamond$
	RFW#:	001	002	003	004	005	006
·					·		
Chlorobenzene		5 U	5 Ü	5 U	5 U	5 U	5 U
Ethylbenzene		5 U	5 U	5 U	5 U	5 U	5 Ü
Styrene		5 U	5 U	5 U	5 U	5 U	. 5 U
Xylene (total)		5 U	5 U .	: 5 U	5 U	5 U	5 U
*= Outside of EPA CLE	QC limits.						

Lionville Laboratory, Inc.

Volatiles by GC/MS, HSL List Report Date: 08/27/02 12:00 Client: TNUHANFORD F02-009 H1845 Work Order: 11343606001 Page: 2a RFW Batch Number: 0207L262

	Cust ID:	B153H4	1		B153H4	Ł		B153H4	:	VBLI	CHE		VBL	KHE BS		VBLK	JS	•
Sample Information	RFW#: Matrix:	007 WATER	7		007 MS WATER	5		007 MSD WATER	)	02L	<b>/H324-!</b> WATER	/B1	02L	VH324-I WATER	ив1		<b>H327-1</b> WATER	MB1
	D.F.:	1.0	00		1.0	0 (		1.0	Ö		1.0	0(		1.	00 .		1.0	30
	Units:	ug/I			ug/I	ت		ug/L	1		ug/l			ug/1	ٺ		ug/I	ដំ ់
	Toluene-d8	101	%		99	%	,	102	8		99	8	3	95	8		103	~~~~~ %
Surrogate Bromofl	luorobenzene	81	ે		80 *	ે		82	8		78 '	· 8		8.2	૪		81	8
and the second s	proethane-d4	87	%		90	8		94	% .c₁	5.7 1	84	% .c.1	'	96	% .		88	%
Chloromethane		10	==£1 U	.====	 10	-=Σ1	.===:	 10	ŒΙΙ:	====	 10	Ω π±πτ	====	====== 10	==E1:	====	10	=≕Il U
Bromomethane		10	U		10	U		10	Ū		10	.U		10	Ū.		10	U
77-17 Ch. 1	-	10	U		10	U		10	Ü.		10	U	+ ,	10	Ü		10	U
Chloroethane		10	Ü		10	Ū		10	Ü		10	Ü		10	Ū		10	Ü
Methylene Chloride	· · · · · · · · · · · · · · · · · · ·	4	J		6	-		. 8			5	Ū		5	Ü		5	Ü
Acetone		10	Ū		10	IJ	٠	10	U		1.0	Ū		10	U		10	U
Carbon Disulfide		5	U		5	U		5	U		5	Ü		5	U	•	5	U
1,1-Dichloroethene	The state of the s	. 5	Ü		93	8		96	0	•	- 5	U		70	8		5	U
1,1-Dichloroethane		5	U		- 5	Ū		5	U		- 5	Ü		5	U		5	U
1,2-Dichloroethene (to	otal)	5	U		5	U		5	Ū	*	- 5	U		. 5	U		- 5	U
Chloroform		5	U		.5	Ü		5	U		5	Ü.		5	U		5	U
1,2-Dichloroethane		5	U		5	Ū.	-	5	U		5	Ū		5	U	•	5	U.
2-Butanone		10	U		10	U		10	U.		10	U		10	U		10	U
1,1,1-Trichloroethane_		5.	Ü		5	U.		5	Ū		· 5	U		5	U		5	Ū
Carbon Tetrachloride		5	U		5	U		5	Ū		- 5	U		5	· U		. 5	U
Bromodichloromethane		5	U		5	U		5	U		5	Ū.	•	5	U		5	U
1,2-Dichloropropane		, 5	Ū		- 5	U	. ,	5	Ū		5	Ũ		5	U		- 5	U
cis-1,3-Dichloroproper	ne	5	Ū.		. 5	Ū		5	U		5	Ū		. 5	Ü		-5	$\mathbf{U}$
Trichloroethene		5	U		101	왐		106	%		5	Ŭ		94	왕		5	U
Dibromochloromethane_		5	U		. 5	Ú		.5	U		5	Ü		. 5	U		5	U
1,1,2-Trichloroethane_		5	U		5	Ü		5	U		5	U	. :	5	U		5	Ū
Benzene		5	U		102	. 8		107	%		5	U		96	8		5	U
Trans-1,3-Dichloroprop	oene	5	Ü		5	U		5	Ū.		5	U,		5	U.		5	U
Bromoform		5	U		5	Ü		5	U		. 5	U	100	5	U		5	Ū
4-Methyl-2-pentanone_		10	Ū		10	U		10	U		10	σ		10	U		10.	Ū
2-Hexanone		10	U		10	Ü		10	Ų		10	U	•	10	U		10	U
Tetrachloroethene		5	U		5	U		5	U	1.3	5	Ü		. 5	Ü		5	U
1,1,2,2-Tetrachloroeth	nane	5	U		5	U		5	U,		5	Ü		. 5	U		5	U
Toluene	<u> </u>	5	U		106	8		111	8		5	υ	100	98	8		. , 5	U
*= Outside of EPA CLP	QC limits.					•						·				-		+ 10,

RFW Batch Number:	02071262	Cli	ent: '	TNUHA	NFORD	F02-009	) H1	845	Work O	rde	r: 11343	3606	001	Page: 2	<u>}b</u>				
	С	ust ID:	<b>B</b> 1.	53H4	. • . "	B153H4	Ŀ		B153H4		VBLKHE			VBLKHE BS	3	VBI	LKJS		
		RFW#:		007		007 MS	5		007 MSD		02LVH32	4-M	B1	02LVH324	-MB1	021	LVH327	-ME	1
Chlorobenzene				5	U	104	왕		109	ુ જ		5	U	100	ક			5	U
Ethylbenzene				5	Ų	5	U		5	U		5	Ų,	5	5 U			5	U
Styrene				5	U	5	Ų		5	U		5	U	Ę	5 Ψ			5	Ū
Xylene (total)				5	U	5	U		5	U	1 1	5	U	5	5 U			5	U
*= Outside of EPA	CLP QC 1	imits.														2.7			

RFW Batch Number: 0207L262

Volatiles by GC/MS, HSL List Report Date: 08/27/02 12:00 Client: TNUHANFORD F02-009 H1845 Work Order: 11343606001 Page: 3a

Cust ID: VBLKJS BS

	02LVH327-MB1			
Information Matrix:	WATER		en e	
D.F.:	1.00		e e	
Units:	ug/L			
	100 0			
Toluene-d8 Surrogate Bromofluorobenzene	102 % 82 %		, S	
Recovery 1,2-Dichloroethane-d4		)f}f	_f1	1=====================================
Chloromethane	10 U	•	-1.T	. T T T T T T T T
Bromomethane	 10 U		•	
Vinyl Chloride	_ 10 U		•	
Chloroethane	10 U		÷	
Methylene Chloride				
Acetone				
Carbon Disulfide	5 U			
1,1-Dichloroethene	 94 %			
1,1-Dichloroethane	- 5 U			
1,2-Dichloroethene (total)	- 5 U			
Chloroform	- 5 U			
1,2-Dichloroethane	5 U			
2-Butanone	10 U			
1,1,1-Trichloroethane				
Carbon Tetrachloride				
Bromodichloromethane	- 5 U			
1,2-Dichloropropane	5 U			
cis-1,3-Dichloropropene	5 U			
Trichloroethene	101 %			
Dibromochloromethane	5 U			
1,1,2-Trichloroethane	_ 5 U		en de la companya de	
Benzene	_ 101 %		•	
Trans-1,3-Dichloropropene	_ 5 U			
Bromoform	_ 5 ປັ			
4-Methyl-2-pentanone	_ 10 U			
2-Hexanone	_ 10 U			
Tetrachloroethene	_ 5 U			
1,1,2,2-Tetrachloroethane	5 U		· ·	
Toluene	106 %			
*= Outside of EPA CLP QC limits.				

RFW Batch Number: 0207L262 Client: TNUHANFORD F02-009 H1845 Work Order: 11343606001 Page: 3b

Cust ID: VBLKJS BS

RFW#: 02LVH327-MB1

Chlorobenzene 104 %
Ethylbenzene 5 U
Styrene 5 U
Xylene (total) 5 U
\*= Outside of EPA CLP QC limits.

. • •			
B153F8			
1		21.2	

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F02-009 H1845

Matrix:

WATER

Lab Sample ID: 0207L262-001

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID:

h080718

Level:

(low/med) <u>LOW</u>

Date Received: 07/26/02

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 08/07/02

Column: (pack/cap) CAP\_

Dilution Factor: 1.00

CONCENTRATION UNITS:

Number TICs found: 3

CAS NUMBER	COMPOUND NAME	   RT	EST. CONC.	Q
=======================================	=======================================	======	==========	=====
1.	SILOXANE	18.265	20	J
2.	SILOXANE	22.204	30	J
3.	UNKNOWN	25.482	5	J
				ii

B153F9			•			-
213313	,					

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client:

TNUHANFORD F02-009 H1845

Matrix:

WATER

Lab Sample ID: 0207L262-002

Sample wt/vol:

5.00 (g/mL) ML

Lab File TD:

h080719

Level: (low/med) LOW

Date Received: 07/26/02

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 08/07/02

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		======	==========	=====
l				İi

в153н0	*			

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client:

TNUHANFORD F02-009 H1845

Matrix:

WATER

Lab Sample ID: 0207L262-003

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID:

h080714

Level:

Date Received: 07/26/02

(low/med) LOW

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 08/07/02

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
		======= 		====
1.	1	    · · ·		
		l	l	1

l				
B153H1	•			
		•		

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client:

TNUHANFORD F02-009 H1845

Matrix:

WATER

Lab Sample ID: 0207L262-004

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID:

h080715

Level: (low/med) LOW

Date Received: 07/26/02

% Moisture: not dec. \_\_\_

Date Analyzed: 08/07/02

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:

Number TICs found: \_0

		1		
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
				=====
1.				
	<u></u>	<u>                              </u>		

CLIENT SAMPLE NO.

VOLATILE ORGANICS ANALYSIS SHEET TENTATIVELY IDENTIFIED COMPOUNDS

		•	
İ	B153H2		
		•	

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F02-009 H1845

Matrix:

WATER

Lab Sample ID: 0207L262-005

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID:

h080716

Level:

(low/med) LOW

Date Received: 07/26/02

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 08/07/02

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:

Number TICs found: 0

1	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
. !	1.				=====
		l	<u> </u>	l	<u>  </u>

B153H3			• •
1.			

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client:

TNUHANFORD F02-009 H1845

Matrix:

WATER

Lab Sample ID: 0207L262-006

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: \_h080717

Level:

(low/med) LOW

Date Received: 07/26/02

% Moisture: not dec. \_\_

Date Analyzed: 08/07/02

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:

Number TICs found: \_0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.			=========   	=====     

]	•		
B153H4	•		
Ì		1.	

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client:

TNUHANFORD F02-009 H1845

Matrix:

WATER

Lab Sample ID: 0207L262-007

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID:

h080820

Level:

Date Received: 07/26/02

(low/med) LOW

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 08/08/02

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:

Number TICs found: 3

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
		<b>====</b> ================================	======		=====
	1.	SILOXANE	18.267	90	J
j	2.	SILOXANE	22.206	200	<b>J</b>
	3.	UNKNOWN	25.493	30	J
ĺ	<u> </u>				

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

VBLKHE

Client:

TNUHANFORD F02-009 H1845

Matrix:

WATER

Lab Sample ID: 02LVH324-MB1

Sample wt/vol:

<u>5.00</u> (g/mL) ML

Lab File ID:

h080706

Level: (low/med) LOW

Date Received: 08/07/02

% Moisture: not dec.

Date Analyzed: 08/07/02

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:

Number TICs found: 0

			1		
	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	===========	=======================================	======		=====
ļ	1.				
1			. ]		

VBLKJS	-	

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F02-009 H1845

Matrix:

Lab Sample ID: 02LVH327-MB1

Sample wt/vol:

<u>5.00</u> (g/mL) ML

Lab File ID:

h080818

Level:

(low/med) LOW

Date Received: 08/08/02

% Moisture: not dec. \_

Date Analyzed: 08/08/02

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT EST. CON	c.   Q
		==== ===== ==========	==== ====
1.			
			i i

						•			-		(y)	VO	A	DNA	6[	(D	rim		. 7	-1 e	* **	,	. 6			
Lionville Labo	ratory	Use C	Only	Cus	stody	Trar	sfer	Re	CC	ord/	Lab	Wc	rk	R	<del>j</del> an	65	Ps	ice.	1	, 1			4		. #	
02076	26	2					IEL: CON				MARER	A ME			5		L I C	ige —	0 /				<i>}</i>	V SNVIII II.	ABOKATO	ORY ING.
Client TNU	- 11/	NFO	201	- 50	EU E	7 -019	<del></del>	Ref	rigera	tor#	·	17	2		{		1	<u> </u>	2				19710,7			T
Est. Final Pro			•		<i>y</i> 1 0	ior co	<del>/</del>	_			Liquid	300	2AC		<del></del>		,		IAG		<del> </del>	<del>                                     </del>				1
Project #	.,. Our	(13	f3-6	06-00	1-9999-	00		#/Ty	/pe C	ontainer	Solid	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		1											<u> </u>	
Project Conta	ct/Ph	one#						Vol	ıme	-	Liquid	50	1	L					500							
Lionville Lab	orator	y Proje	ect Mar	nager		১ত	· · · · · · · · · · · · · · · · · · ·			·	Solid	<u> </u>			<u> </u>									<b></b>		<u> </u>
oc Spec	ac SPEC Del SED TAT 30 days							Pre	serva	tives		ļ <u> </u>	022	<del> </del>	+-1				HNO)	<u> </u>				<u> </u>		<del> </del>
Date Rec'd	<u> 7</u>	-26-	0 <u>L</u>	_ Date	Due	8-25-0	' Z	AN/ REC	ALYSI DUES	ES TED	<b>-►</b> ;	VOA VOA	P AN	ANIC	Herb				Metal Feral	RG ₹		. !				
MATRIX		T	-				Matrix			·	1			J	1		ionvil	<u> </u>			e Only	<u></u>	J.			
CODES: S - Soil SE - Sediment SO - Soild	Lab ID			Client ID/L	Description		Chosen (V)	Mat	rix (	Date Collected	Time Collected	O627H	062514	060BH	OHBON	9 rc/8			MCT (				-			
SL - Sludge W - Water	001	18	153	3 F8	<u> </u>		MS MS	1	-  -	77500	2 0650		2	4	-				7							-
O - Oil A - Air	00.2		)	F9	<del></del>		<del>                                     </del>	1-4"		<u> </u>	0855	3	2	4			_		<del></del>							-
DS - Drum Solids	003	;	1	Но			<del>                                     </del>	++	$\dashv$	_	0920	3	2	4				- 1	<del>'</del> ,		<u> </u>		-			1
DL - Drum Liquids L - EP/TCLP	004		†	H1				11	1	<del>`                                     </del>	0950	3	1	ч					<u> </u>							1
Leachate	005	_1	1	H2				11	1	1	1025	3	2	4	<b>—</b>				,		<b> </b>					
WI - Wipe X - Other F - Fish	006		1	H3	· · · · · · · · · · · · · · · · · · ·			11	1		1055	3	2	4	-1				7							
r • Fiail	007			H4				11	$\neg$		0700	3	.2	-1	10-	26.05								,		
																									····	
										_ '																
			3											1.1												:
Special Instruct	ions:	SA	F #	FOZ-	009		DAT	E/REVIS	IONS	Al A	4g , Ba	Д.	$\rho_{\alpha}$	CJ	Cac	- C.	L	V				le Labo	ratory	Use On	ıly	
Rim	Ma	trix	Qc						_ 2.	Mg	Ma. A	/a,	N:	Sb.	V. Z	'n.,		<u></u>	1)	mples v Shippe nd Deli	d 🚣	or	1). [	per Resis Present ckage	ρη Ou	uter
							<u>8-</u>	15-0.	<b>2</b> _ 3.	Chan	ge 0\$H	BG	Λ 4c	<u> </u>	HBG	Υ		<del></del> .		bill#_ See		玄	Pac	Jnbroke kage	O or	N
								4.							-			3)	Receive	ntorSH edinG e∰Tor	ood		Present <b>C</b> Unbroke	or V		
					6.							<u> </u>				Sample		ad	Sar	nole 🕜	or	ı				
Refinquished by			eived by	Dat	te Time	Re	elinquished by		Re	eceived by	OBIG	Date Time Discrepancies Between				chott gambie u		ple Re	c't							
Fel Se	1/2	Ken	又	7240	2 0910		COM	POST	TE			<del>  \</del>     T	CN		Samples Labels and COC Record? Y or Holding Times			Cooler 11 P								
WAS					•:	KE NI	<del>[]</del>  -	EN		790		56	779	17-	<del></del>	<b>⊘</b> or	N	Ten	iih	4.5	- ' I					

FH-Centra	al Platea	u Project		CH	IAIN OF CUS	TODY/S/	AMPLE	ANAL	YSIS I	RE	OUEST		F02-	009-001	Page i o	2
Collector GA Thomas, MA					nv Contact	Telephon 373-39	e No.		1	Proj	eet Coordin NT, SJ	ator Pr	ice Code	7N	Data Ture	
Project Designation ModuTank - Anni		g of Purgewater			ng Location ewater Storage and Tro	eatment Facilit	у	·		SAF F02-		Ai	r Quality		<b>43</b> D	ays
ice Chest No.	SE	E OSPC		Field L	ogbook No. HNF-N-31	1	COA 117546ES1	10			hod of Shio ederal Expre				·	
Shinned To EBERLINE SERV	VICES (For	merly TMA)		Offsite	Property No.	-1m51-12-1	) <b>L</b>			Bill	of Lading/	Vir Bill No.	_SE	E 0	<i>پ</i> ھے۔	
POSSIBLE SAMP		<del></del>				C0014C										}
		at samples are less that not require a RCF rad			Preservation	to pH <2 Com	Cool 4C	Cool 4C	HNO3 to <2:	pH	Marie	{NO3 to pit <2 	HNO3 10 pH <2 P	11NO3 to p11 <2 P		
site shipment Special Handling					Type of Container	aGs*	aG	aG	aG		Р		2			——
	- -				No. of Container(s)		2	4								
					Volume	20mL	1000mL	1000mL	500m	L .	1000mL	1000mL	1000ml.	1000mL		
		CARANT P ANIAL	LVCIC		· · · · · · · · · · · · · · · · · · ·	VQA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	Pesticides - 8081; Herbicides -	1CP Meta 6016A (T. Marcury 7470 - (C	AL),	Tritium - H3	Americium-241	Gross Alghe; Gross Bets	Strontium- 89,90 Total Sr		
		SAMPLE ANAI	17,512			A-C	DE	#150A	Isotopi Plutonii	ie um			<b>₩</b> 7	7/25%		
Sample No		Matrix *		Data	Sample Time	ହୁଣ୍ଡ ବ୍ୟବହାର ଜଣ୍ଡ ବ୍ୟବହାର			J				17650 - V. SA		WE CAN TARRE	PANTANG
	0.		Sample							产 和組	在重要与40° (10°)。	Di Silandi Kalabina	E S. Land of Contract	y as a constant of the 2	A STATE OF THE STATE OF	(C. L.) out Standard
B153F8		WATER	7/3	25/0 Z		x	<u>~</u>	<u> </u>	<del>                                     </del>			<del> </del>	<del> </del>		<del> </del>	
B453F9		WATER	<u>- 3)T</u>	7/25				<del> </del>	<del>                                     </del>			1	<del>                                     </del>	-	<del> </del>	
B153H0		WATER	47	7/25	, ,			<del> </del>	<del> </del>					-		-
B163H1		WATER		<u>7/25</u>				<u> </u>	4	, t	<del>                                     </del>	<b> </b>	<del>                                     </del>	<del> </del>		1
B163H2		WATER		7/25					<u> </u>		<u> </u>	<u> </u>			<u> </u>	h fareir t
CHAIN OF PO				n/Print		D/T/		CIAL INST	RUCTIO	ONS		•				Matrix *
Relinquished By/Remove	ed From	Pote/Time 27	25/02 P	Hyrstore LL J.	R.f.hi	Date/Time &~	210		•							5=Soil SE×Sodiment SO=Solid
Relinguished By/Remove	ed From E	ReDate/Time	Received	By/Store	d in Ex	Date/Time								•		SI=Sludge W = Water O=Oil
Relinquiphed By/Remove	ed From	Date/Time 26-02 09/0	Received	By/Store	~~ <i>~</i> /	Date/Time	5									A=Air DS=Dram Solids DL=Dram Liquids
Relinquished By/Remove	ed From	Date/Time	Received	By/Store	ed In	Date/Time										T=Tisse Wt=Wipe L=Liquid V=Vegetation
Relinquished By/Remov	red From	Date/Time	Received	By/Store	ed In	Date/Time							•			X=Other
Relinquished By/Remove	ed From	Date/Time	Received	By/Store	ed in	Date/Time								•		/ .
LABORATORY   SECTION	Received By					T	irle					-		:	Date/Time	<i>i</i> -
FINAL SAMPLE	Disposal Me	athod	<del></del>	<u> </u>	<del></del>			TN:-	posed By		<del></del>			<del></del>	Date/Time	1
DISPOSITION	Cialmadi Mi	ound.		· ·			·	. DIS	poseu Dy							

FH-Central Platea	u Project	C	HAIN OF CUST	TODY/S	AMPLE	ANAL	YSIS	REQUES'	<u>r  </u>	F02	-009-001	Page 1	of 2
Collector GA Thomas, MA Baechler			anv Contact Wright	Telepho 373-3		*. · · · · ·		Project Coord TRENT, SJ	inator P	rice Code	7N		rnaround C
Project Designation ModuTank - Annual Sampling	g of Purgewater		ing Location gewater Storage and Tre	atment Facili	ty	<u> </u>		SAF No. F02-009	A	Air Quality [		45 Days	
Ice Chest No. SE K	OSPC		Logbook No. NF-N-314 1		COA 117546ES	10		Method of Shir Federal Expr					
Shinned To EBERLINE SERVICES (For	merly TMA)	Offsite	Property No.	TWG 7-22-0	n Po	12018	5	Bill of Ladings	Air Bill No	5/	EE O	SPC	
POSSIBLE SAMPLE HAZAI  **Historical Data indicates that total activity and therefore do n	n samples are less than		Preservation	(00) 4L HCI H400- to pH <2 <del>000</del>	Cool 4C	Cool 4C	HNO3 to <2	pH None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2		
site shipment		creen jor ojj-	Type of Container	aGs*	аĞ	aG	aG	P	р	P	p		
Special Handling and/or St	00/4°C		No. of Container(s)	3	2	4	1	ı	1 /	2	1		
	20017		Volume	20mL	1000mL	1000mL	500m	L 1000mL	1000mL	1000mL	1000mL		
	SAMPLE ANALI	YSIS		VOA - 8260A (TCL) A - C	Semi-VOA - #270A (TCL) 7)—E	Pesticides - 8081; Herhicides - 8150A	ICP Meta 6010A (T. Mercury 7470 - (C Isotopi Plutoniu	AL); ;V); c	Amesicium-24	Gross Beta	Strontium- 89,90 Total Sr 1/25/02.		
Sample No.	Matrix *	Sample Date	Sample Time										Language Cons
B153F8	WATER	SAT 7/25/0	02										
B153F9	WATER	7/25/0	2 0855	K	K	Y	×					<u> </u>	
В153Н0	WATER	7/25/02	6920	ĸ	X	Χ'	χ.						
B153H1	WATER	7/25/07	L 0950	x	x	Υ	У						
B153H2	WATER	7/25/0		×	У.	х	<b>&gt;</b>						
CHAIN OF POSSESSION		Sign/Print			SPEC	IAL INSTR	UCTIO	NS		<del>- 1</del>	······································		Matrix *
Relinquished By/Removed From Area Thomas 5 Mrs. The Relinquished By/Removed From Eron Eron Eron Eron Eron Eron Eron Eron	2 C Date/Time 14 00	Received By/Stor	Rofeh 15	ate/Time 7 - 2	5.02			• • •					S=Soil SE=Sediment SO=Solid St=Sludge
Relinquished By/Removed From	Date/Time 24 02 59(0	Received By/Stor	ed in 🗂 Da	ate/Fime 02 09/1			:		•		•		W = Wnter O=Dil A=Air DS=Dmm Solids
Relinquished By/Removed From	Date/Time	Received By/Ston	ed in Da	ste/Time						• .			DL=Dnim Liquids T=Tissue WI=Wipe L=Liquid
Relinquished By/Removed From	Date/Time	Received By/Stor	ed In Da	ate/Time				٠.					V=Vegetation X=Other
Relinquished By/Removed From	Date/Time	Received By/Stor		ate/Time									
LABORATORY Received By SECTION	· · · · · · · · · · · · · · · · · · ·			Tu	e						Da	te/Time	
FINAL SAMPLE Disposal Met DISPOSITION	thod					Dispo	sed By				D	ate/Time	

FH-Centra	l Plateau	Project		СНА	IN OF CUST	TODY/S.	<b>AMPLE</b>	ANAL	YSIS	RE	QUEST	7	F02	-009-001	Page Z	01 2
Collector GA Thomas, MA I			Cor	Ompany Contact Telephone No. Project Coordin CS Wright 373-3994 TRENT, SJ						nator	Price Code / N			rnaround V		
Project Designation ModuTank - Annu	al Sampling o	of Purgewater	San F	pling l urgewa	ocation ter Storage and Trea	atment Facilit	у			F02-009			Air Quality 🗌		45 Days	
Ice Chest No.	SE	EOSP	Fie	d Logb HNF	ook No. - No 314 1	1	COA 117546ES	10			hod of Ship ederal Expre		· .			
Shipped To EBERLINE SERV	ICES (Forme	erly TMA)	on	site Pro	perty No. 0 2 6 1 8 5	-100 7·27	พ		25 g 5 g 4	Bill	of Lading/	Air Bill No	, SE	E O	SPC	
POSSIBLE SAMPI	LE HAZARI	<del></del>				COD 14C	Cool 4C	Cool 4C	HNO3 to	рН	* None	HNO3 to pH		HNO3 to pH		
total activity and the site shipment.	erefore do no	samples are less that of require a RCF rad	screen for off-	T	Preservation  ype of Container	to pH <2 <del>Com</del> aGs*	аG	аG	aG		P	<2 P	<2 P	P		
Special Handling	and the second s	00 4°C		<u> </u>	o. of Container(s)	3	2	4	1		1	7	2	1		
					Volume	20mL	1000mL	1000mL	500m		1000mL	1000mL	1000mL	1000mL		
		SAMPLE ANAI	LYSIS			VOA - 8260A (TCL)	Semi-VOA 8270A (TCL)	Pesticides - 8081; Herbicides - 8150A	ICP Mete 6010A (T. Mercury 7470 - (C Isotopi Plutonix	AL); (V);	Tridium - H3	Americium-24	Gross Alpha Gross Beta	Strontium- 89,90 Total Sr		
Sample No	),	Matrix *	Sample Da	te	Sample Time					7		V Supple			\$16.650	<b>V</b> ENERAL SE
B153H3		WATER	7/20	-	1655	×	×	X	х							
		÷ .						:								
š.										$\Box$						
															<u></u>	
					<u> </u>				<u> </u>							
CHAIN OF PO Relinquished By/Remove Trag thomas F Relinquished By/Remove R. C. DO2	od From  Of Kauf  Ed From ER  R. Coh II	homes 7/25/ 2 e Date/Time 14/6	72 B.Fall	Stored In Stored In	15 8 C D	・2 グ・coペ ate/Time	-06	CIAL INSTI	RUCTIO	NS						Matrix *  S=Soit SE=Sediment SO=Solid SI=Skidge W = Water O=Oit
Relinquished By/Remove	7-2	Date/Time  1.02 0910  Date/Time	Received By/	2 ·	7-260	ate/Time <u>07 (</u> ate/Time	0					:				A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WJ=Wipe L=Liquid V=Vegetation
Relinquished By/Remove	ed From	Date/Time	Received By/	Stored In	D	ate/Time				•			:			V=Vegetation X=Other
Relinquished By/Remove	ed From	Date/Time	Received By/	Stored In	D	ate/Time	,									
LABORATORY SECTION	Received By					Tit	le					.:- <u>-</u>		Г	Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Meth	od	· · · · · · · · · · · · · · · · · · ·					Disp	osed By	: ,				1	Date/Time	

FH-Central Plate	au Project	CI	IAIN OF CUST	FODY/S	<b>AMPL</b>	E ANAL	<b>YSIS</b>	REQUES	T	F(	)2-009-002	Page L	ol T
Collector GA Thomas, MA Bacchler			nv Contact Vright	Telepho 373-39		· · · ·		Project Coor TRENT, SJ	dinator	Price Code	7N	Data Tur 45-1	naround C
Project Designation  ModuTank - Annual Samplin	ng of Purgewater		ng Location ewater Storage and Tre	atment Facili	ty			SAF No. F02-009		Air Quali	ty 📋	<b>40.</b>	——————————————————————————————————————
Ice Chest No.	FOSPE		ogbook No. JF - N. 314		COA 117546E	S10		Method of Sh Federal Exp					
Shinned To EBERLINE SERVICES (Fo		Offsite	Property No.	Ab:	امح	85		Bill of Ladin	g/Air Bill	No.	FE	051	حا
POSSIBLE SAMPLE HAZA										-			
**Historical Data indicates the total activity and therefore do	hat samples are less than onot require a RCF rad s	2000 pCi/g creen for off-	Preservation	HCl to pH <2 Conl 4C							:		
site shipment.  Special Handling and/or !		,	Type of Container	aGs*									
	00146	:	No. of Container(s)	3 40mL									
			Volume	40mi.									
	SAMPLE ANAL	YSIS		VOA - 8260A (TCL)									
Sample No.	Matrix *	Sample Date	Sample Time			<u> </u>	1000					28691	
B153H4	WATER	7/25/09	2 5700	×							3		
A							<u> </u>						
					<del> </del>	_	-		_				
							<del> </del>					-	
CHAIN OF POSSESSION	<u>                                       </u>	Sign/Print	Names	1	SPI	CIAL INST	RUCTIO	)NS				1	Matrix *
Relinquished By/Removed From Cred Thomas Fill Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From	Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time	Received By/Stor	ed to Co	Onte/Time									S=Soil SE=Sediment SO=Solid SI=Shudge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From	Date/Time	Received By/Stor	ed In I	Date/Time									
LABORATORY Received I	Ву			, T	I I							Date/Time	
FINAL SAMPLE Disposal N DISPOSITION	Method					Disp	osed By			· .	-	Date/Time	

atractor	OFF-SIT	E	CONTROL NO (To be obtained from PROPER	
BHI-HANFORD	PROPERTY CO	NTROL	AMZO	185
		IPLETED BY ORIGINAT		
Engineering Support	Field Analytica	Support	Field Sampling Suppo	ort
The following items	are to be shipped from	Contractor	/endor	
Routing FED EX	X	J , L	Collect	
pped to RECRA LAB NE 208 WELSH POO		Off-site Custodian		
LIONVILLE, PA				
iress ATTN: ORLETTI	E JOHNSON State Zip Co	On-site Custodian		HID
/ untry (610) 280-3012	State Lip Co	(4e)		
			O I Ala X	
y. Property No.	Description (include Mar	nutacture Name, Model,	Senal No.)	Acquisition Cost
F6 77 163 5 M	L 421 SAF BOZ-	ozy and Fo	2-009	•
16 82165 FR	C 96-018 SAF F	72-0-0		
FG 75 165 FR	96.014  SAFF			
	C 02-007 SAFF			
		the second second second second second second second second second second second second second second second s		
3///		A Company of the Comp		
4 40 162 ER	c 96-064 SAFfor	-005 #1 of	6 7905 7105	7415
		and the second of the second o	6 7905 7105	1 .
		<del></del>		<u> </u>
Classified Unclassity for the off-site use of this	<u>,                                     </u>	ontract Sr	nipped Under Contractor's Use Pern	<del></del>
Required for Project Worl		#3 0	6 7904 9856	9703
☐ Business Trip		44%	1 7006 3105	
☐ Off-site Assignment			1905 7105	7492
	ne I int Oak name to be	\$ 5 cf	6 7904 985	1 4747
Shipment to Subcontracto	or. List Subcontract No.			6 9747
Other (Please specify)		# C ot	6 790 5 7105	7573
ENV <del>IRONMENTAL S</del>	SAMPLES PACKAGED IN		<u> </u>	
POLYCOOLER WITI	H WET ICE AND DRY SOF	RB		
	TION MONITORING RELEASE MUST B		E DAY THAT MATERIAL IS DELIVE	ERED TO SHIPPING
Clearance for Public ReleaseN	A RMS	Survey No.A		Date
ation of and Contact for Property	I (Nama(Phaga Na /Pida //saa)			
· · · · · · · · · · · · · · · · · · ·		<del>EN/521-800</del> 3/3728	BUILDING/300 AREA	
e Ready for Shipment	Cost Code to be (		Approximate Date This	:
7.25.02		55 PHMC	Property will be Returned	
ginated By	Date	Authorized By		Date
R. fallle	7.25.02			
perty Representative Signature	Date	Property Managemer	it Approval	Date

Authorized Shipping Signature

Date 7-25-02

7.25.02

PART II - TO BE COMPLETED BY SHIPPING

# LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

CLIENT:

Purchase Order/Project:

DATE: 7-2602

SAF#/ SOW#/ Release #: FO2 - 009

Laboratory SDG #:

02076 262

NOIF	ALL ENTRIES MARKED "NO" MUST BE	EXPLAINED I	N THE COMM	ENT SECTION	
1.	Custody seals on coolers or shipping container intact, signed and dated?	□Xes	□ No	□ N/A	☐ see Comment #
			-		
2.	Outside of coolers or shipping containers are free from damage?	□ Yes	□ No	□ N/A	☐ see Comment #
3.	Airbill # recorded?	□ Yes	□ No	□ N/A	☐ see Comment #
4.	All expected paperwork received (coc and		the second		1 7
	other client specific: historical data,	D∕Yes	□ N <sub>0</sub>	□ N/A	☐ see Comment #
	alpha/beta or other screening data as		•		
	applicable)? (paperwork sealed in plastic bag and taped to inside lid)		* 4		
		· /		ž	
5.	Sample containers are intact?	12 Yes	□ No	□ N/A	☐ see Comment #
6.	Custody seals on sample containers intact, signed and dated?	D Yes	□ No	□ N/A	D see Comment#
			4		
7.	All samples on coc received?	⊠ Yes	□ No	□ N/A	□ see Comment #
8.	All sample label information matches coc?	□ Yes	□ No	□ N/A	☐ see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	□ Yes	□ No	DNIA	☐ see Comment #
10	. Shipment meets LvLl Sample Acceptance	Ø Yes	□ No	<b>D</b>	_
	Policy? (identify all bottles not within policy. See reverse side for policy)	ı⊿ i es	Li No	□ N/A	□ see Comment #
11	. Where applicable, bar code labels are	□ Yes	Ď No	EI N/A	
	affixed to coc?		₩ NO	TI MW	D see Comment #
	Open L	-El Yes	□ No	□ N/A	<b>m</b>
12	coc signed and dated?	-0.4	<b>L</b> 140	D N/A	D see Comment #
13	. coc faxed or emailed to client?	□ Yes	□ No	□ N/A	□ see Comment#
14	Project Manager/Client contacted	-	·		
	concerning discrepancies? (name/date)	□ Yes	□ No	D N/A	☐ see Comment #

Cooler # / temp and Comments:

441 224 96-064 02.007 96-018

.421

Laboratory Sample Custodian:

Laboratory Project Manager:

### Lionville Laboratory, Inc. BNA ANALYTICAL DATA PACKAGE FOR TNUHANFORD F02-009 H1845

DATE RECEIVED: 07/26/02 LVL LOT # :0207L262

,							
CLIENT	ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
					· <u></u>	<u> </u>	
				00770066	05/05/00	05 (00 (00	00/15/00
B153F8		001	W	02LE0866	07/25/02	07/29/02	08/15/02
B153F9		002	W	02LE0866	07/25/02	07/29/02	08/15/02
B153H0		003	W	02LE0866	07/25/02	07/29/02	08/15/02
B153H1	,	004	W	02LE0866	07/25/02	07/29/02	08/15/02
B153H2		005	W	02LE0866	07/25/02	07/29/02	08/15/02
B153H3		006	, W	02LE0866	07/25/02	07/29/02	08/15/02
B153H3		006 MS	W	02LE0866	07/25/02	07/29/02	08/15/02
B153H3		006 MSD	W	02LE0866	07/25/02	07/29/02	08/16/02
	•					42	
LAB QC:					•		
							•
		MDI	T <sub>4</sub> T	02LE0866	N/A	07/29/02	08/15/02
SBLKAO		MB1	M		· ·		
SBLKAO		MB1 BS	W	02LE0866	N/A	07/29/02	08/15/02





Client: TNU-HANFORD F02-009

LVL#: 0207L262

SDG/SAF #: H1845/F02-009

**W.O.** #: 11343-606-001-9999-00

**Date Received:** 07-26-2002

#### **SEMIVOLATILE**

Six (6) water samples were collected on 07-25-2002.

The samples and their associated QC samples were extracted according to Lionville Laboratory OPs based on method 3520 on 07-29-2002 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 08-15,16-2002.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 2. Samples were extracted and analyzed within required holding time.
- 3. Non-target compounds were detected in the samples.
- 4. Six (6) of sixty (60) surrogate recoveries were outside EPA QC limits. However, EPA CLP surrogate recovery criteria were met (i.e., no more than one outlier per fraction {acid and base neutral} and no recoveries less than 10%).
- 5. All matrix spike recoveries were within EPA QC limits.
- 6. One (1) of eleven (11) blank spike recoveries was outside EPA QC limits.
- 7. The method blank contained the common laboratory contaminant Bis (2-Ethylhexyl) phthalate at a level less than 2x the CRQL. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 8. Internal standard area and retention time criteria were met.
- 9. Manual integrations are performed according to OP L-QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
- 10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

J. Michael Taylor

08-26-12

Date

President

Lionville Laboratory Incorporated

som\gorup\data\bna\tnu-hanford-0207-262.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 2 4 pages.

Lionville Laboratory	Sample Discrepancy Report	(SDR) SDR #: 024166
Initiator M. Kobel	Batch: 020 7L 262	Parameter: 6625 H
Initiator: Mills be l	Samples: blank	Matrix: water
Client: TNU Hanterd	Method: SW846/MCAWW/CLP/	Prep Batch: 02/E0566
Ollerit.		
1. Reason for SDR		
a. COC Discrepancy Tech Pro	file Error Client Request S tion Error Wrong Test Code O	ampler Error on C-O-C ther
b. General Discrepancy		
Missing Sample/Extract (	· · · · · · · · · · · · · · · · · · ·	mple Pulled Label ID's Illegible
Hold Time Exceeded	nsufficient Sample Preservati	ion Wrong Received Past Hold
Improper Bottle Type  Note*: Verified by [Log-In] or [Prep Group] (or		
	cific results; attach data if necessary)	
C. Problem (include an relevant spec	nins bis (2-ethylhexyl) phth	alate Quall (seb)
the method blank conto	uns bis (2-einginekyi) privi	a 10 13/12 (110)
1	bis (2-ethylhexyl) phthalate	in the ranges of
4ppb to 27ppb		
2. Known or Probable Causes(s)		
3. Discussion and Proposed Action	n Other Description:	parrate
Re-log Entire Batch	report ave-	fee.
Following Samples:		
Re-leach Re-extract		
Re-digest	Aviante Communication of the C	
Revise EDD Change Test Code to		
_ Place On/Take Off Hold (circle)	- $1/1/1/10$	
4. Project Manager Instructionssi	gnature/date: WWW 15 5 10	102
	See Instruction	
Include in Case Narrative	See instruction	
Client Contacted:		
Date/Person Add	<del></del>	
Cancel		
5. Final Actionsignature/date:		nation:
Verified re-[log][leach][extract][d	igest][analysis] (círcle)	
Included in Case Narrative Hard Copy COC Revised		
Electronic COC Revised		
EDD Corrections Completed		
	ded, forward original to QA Specialist fo	
Route Distribution of Completed SE X Initiator		ion of <u>Completed</u> SDR s: Beegle
X Lab General Manager M	Taylor Inorg	anic: Perrone
X Project Mgr. Stone/Johns	on/Haslett GC/L	C: Kiger
X Technical Mgr: Wesson/B	ranieis MS: t	Rychlak/Layman n: Melnic
Data Management: Feldn	nan Admi	n: Soos
Sample Prep: Beegle/Kig		

#### GLOSSARY OF BNA DATA

#### DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- A = Indicates that a TIC is a suspected aldol-condensation product.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.

mmz\10-94\gloss.bna

## **GLOSSARY OF BNA DATA**

# **ABBREVIATIONS**

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

**DL** = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

**DF** = Dilution Factor.

NR = Not Required.

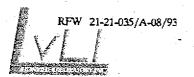
SP, Z = Indicates Spiked Compound.

mmz\10-94\gloss.bna

#### TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP Missed Peak: manually added peak not found by automatic quan program.
- PA Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.



Semivolatiles by GC/MS, HSL List

Report Date: 08/23/02 15:15

RFW Batch Number: 0207L262 Client: TNUHANFORD F02-009 H1845 Work Order: 11343606001 Page: la Cust ID: B153F8 B153F9 B153H0 B153H1 B153H2 B153H3 . 3. 4 × Sample RFW#: 001 0.02 003 004 005 006 Information Matrix: WATER WATER WATER WATER WATER WATER D.F.: 1.00 1.00 1.00 1.00 1.00 1.00 Units: uq/L ug/L ug/L ug/L uq/L ug/L Nitrobenzene-d5 왐 74 왕 61 55 왕 63 è 57 64 ş Surrogate 2-Fluorobiohenvl 59 왕 66 ક ò 48 47 ģ, 51 ę. 52 왕 Terphenyl-d14 뫙 Recovery 79 18 \* % 18 \* 왕 13 2 17 \* % \* % 15 Phenol-d5 68 ջ 76 2 56 ջ 58 9 62 61 2-Fluorophenol 74 ջ 76 ş 62 ջ ջ 50 58 60 2,4,6-Tribromophenol 83 왕 107 85 욳 89 104 91 Phenol 10 U. 10 IJ 11 U 10 Ù 10 IJ 10 bis(2-Chloroethyl)ether 1.0 IJ 10 Ü U 11 IJ 1.0 10 rт 10 ťΤ 2-Chlorophenol 10 U 10 IJ 11 IJ 10 Ū 10 IJ 10 U 1,3-Dichlorobenzene 10 U 10 U 11 U 10 Τĭ 1.0 17. 10 -U 1.4-Dichlorobenzene 10 ŢΤ 10 U 11 U 10 U 1.0 ľΤ 10 IJ 1,2-Dichlorobenzene 10 U 10 IJ 11 U 10 Ű 10 U U 10 2-Methylphenol 10 IJ ΤŢ 10 U 11 10 Ū 10 13 10 ŤΤ 2,2'-oxybis(1-Chloropropane) 10 U 10 U 1.1: TT U 10 10 IJ 10 0 3- and/or 4-Methylphenol 10 13 10 Ū IJ 11 1.0 U ΥŢ 1:0 10 U N-Nitroso-di-n-propylamine U 10 IJ 1.0 11 Ū 10 U 10 IJ 10 IJ Hexachloroethane 10 IJ U 10 11 IJ 10 TΤ 1.0 TI 10 IJ Nitrobenzene 10 TI 10 U 11 U 10 U 10 П 10 Ū Isophorone 10 Ü 10 U 11 · U 10 IJ 10 IJ 10 U 2-Nitrophenol 10 U 10 U U 11 IJ 10 10 IJ 10 U 2,4-Dimethylphenol 10 ŢŢ 10 IJ U 11 10 U 10 IJ 10 U bis(2-Chloroethoxy)methane 10 U 10 U Ū 1.1 10 U 10 IJ 10 Ü 2,4-Dichlorophenol 10 ŢŢ 10 U 11 Ū 10 U 10 IJ 10 Ú 1,2,4-Trichlorobenzene 10 IJ. 10 U П 11 10 U 10 TI 10 IJ Naphthalene 10 U 10 IJ 11 U 10 T. 10 Ú 10 U 4-Chloroaniline U 10 10 ΤŢ 11 U 10 U 1.0 TT 10 U Hexachlorobutadiene 10 ĨΤ 10 U 11 IJ. 10 IJ. 10 Ú 10 TT 4-Chloro-3-methylphenol 1.0 Ħ 10 U 11 U IJ 10 10 U 10 Ü 2-Methylnaphthalene 10 U 10 - [] 11 U 10 Ū 10 17 10 . [] Hexachlorocyclopentadiene 10 ŢΤ 10 U U 11 1.0 U 10 IJ 10 U 2,4,6-Trichlorophenol 10 U 10 TT 11 IJ 10 ΤŦ 10 Ü 10 U 2,4,5-Trichlorophenol 25 IJ 26 TT 27 · TJ 26 U 25 ŧΤ 25 U \*= Outside of EPA CLP QC limits.

RPW#:   001   002   003   004   005   006	RFW Batch Number: 0207L262	Client: TNUH?	NFORD F02-009 I	H1845 Work	Order: 1134360	0 <b>6</b> 001 P	age: 1b
2-Chloronaphthalene	· · · · · · · · · · · · · · · · · · ·	B153F8	B153F9	B153H0	B153H1	B153H2	в153н3 🔿
2-Chloronaphthalene	en en en en en en en en en en en en en e						
2-Nitroaniline	RFW#:	001	002	003	004	005	006
2-Nitroaniline	2 Chloronaphthalana	10 FI	10 11	13 FT	10 II	10 13	10 U
Dimethylphthalate	0.17/2	-					
Acenaphthylene		<del>-</del> .			and the second s	i i	•
2,6-Dintrotoluene		_			the second secon	, -	
3-Nitroanliline		<del>-</del> '			77.7		
Acenaphthene		<del></del>			the state of the s	"" F 25	
2,4-Dinitrophenol		<del></del>					
A-Nitrophenol	•	<del>-</del>				the state of the s	
Dibenzofuran   10 U	2,4-Dinitrophenol	<del>_</del> ' ' '	and the second s		4		· ·
2,4-Dinitrotoluene	4-Nitrophenol	<del>_</del>	and the second s				
Diethylphthalate		_ ,				77.7	
## Chlorophenyl-phenylether	2,4-Dinitrotoluene	_ 10 U			· ·		and the second s
Fluorenee 10 U 10 U 11 U 10 U 10 U 10 U 10 U 10			· ·				· · · · ·
4-Nitroaniline	4-Chlorophenyl-phenylether					. = • •	
4,6-Dinitro-2-methylphenol       25       U       26       U       27       U       26       U       25       U       25       U       25       U       26       U       27       U       26       U       25       U       25       U       25       U       26       U       27       U       10	Fluorene	Lange	•				
N-Nitrosodiphenylamine (1)			the state of the s				
## A-Bromophenyl-phenylether	4,6-Dinitro-2-methylphenol		i i				
Hexachlorobenzene 10 U 10 U 11 U 10 U 10 U 10 U 10 U 10	N-Nitrosodiphenylamine (1)	_ 10 U	10 U			·	and the second s
Pentachlorophenol	4-Bromophenyl-phenylether	_ 10 U	_ <del>-</del>	11 U			_ ·
Pentachlorophenol 25 U 26 U 27 U 26 U 25 U 25 U 25 U 25 D 26 Phenanthrene 10 U 10 U 11 U 10 U 10 U 10 U 10 U 10	Hexachlorobenzene	_ 10 U	10 U		· ·	= -, -	
Anthracene 10 U 10 U 11 U 10 U 10 U 10 U 10 U 10	Pentachlorophenol	25 U	26 U	27 U			
Anthracene 10 U 10 U 11 U 10 U 10 U 10 U 10 U 10	Phenanthrene	_ 10 U	10 U		10 U	10 U	— <del>-</del>
Carbazole 10 U 10 U 11 U 10 U 10 U 10 U 10 U 10	Anthracene	_ 10 U	10 U	11 U		10 U	10 U
Pyrene	C	_ 10 U	10 U	T- , -	10 U	10 U	10 U
Pyrene	Di-n-butylphthalate	10 U	0.7 J	0.7 J	10 U	0.6 J	- 10 U
Pyrene         10 U         10 U         11 U         10 U         <	Fluoranthene	10 U	10 U	11 U	10 U	10 U	····
Butylbenzylphthalate 10 U 10 U 11 U 10 U 10 U 10 U 10 U 10	Pyrene	10 U	10 U	11 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	Butylbenzylphthalate	10 U	10 U	11 U	10 U	10 U	10 U
Chrysene       10 U       10 U       11 U       10 U       10 U       10 U         bis(2-Ethylhexyl)phthalate_       9 JB       20 B       7 JB       13 B       9 JB       4 JB         Di-n-octyl phthalate_       10 U       10 U       11 U       10 U       10 U       10 U         Benzo(b)fluoranthene       10 U       10 U       11 U       10 U       10 U       10 U         Benzo(k)fluoranthene       10 U       10 U       11 U       10 U       10 U       10 U         Benzo(a)pyrene       10 U       10 U       11 U       10 U       10 U       10 U         Indeno(1,2,3-cd)pyrene       10 U       10 U       11 U       10 U       10 U       10 U         Dibenz(a,h)anthracene       10 U       10 U       11 U       10 U       10 U       10 U	3,3'-Dichlorobenzidine	10 U	10 U	11 U	10 U	10 U	10 U
Chrysene       10 U       10 U       11 U       10 U       10 U       10 U         bis(2-Ethylhexyl)phthalate_       9 JB       20 B       7 JB       13 B       9 JB       4 JB         Di-n-octyl phthalate_       10 U       10 U       11 U       10 U       10 U       10 U         Benzo(b)fluoranthene       10 U       10 U       11 U       10 U       10 U       10 U         Benzo(k)fluoranthene       10 U       10 U       11 U       10 U       10 U       10 U         Benzo(a)pyrene       10 U       10 U       11 U       10 U       10 U       10 U         Indeno(1,2,3-cd)pyrene       10 U       10 U       11 U       10 U       10 U       10 U         Dibenz(a,h)anthracene       10 U       10 U       11 U       10 U       10 U       10 U	Benzo(a) anthracene	10_U	10 U	11 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate       9 JB       20 B       7 JB       13 B       9 JB       4 JB         Di-n-octyl phthalate       10 U       10 U       11 U       10 U       10 U       10 U         Benzo(b)fluoranthene       10 U       10 U       11 U       10 U       10 U       10 U         Benzo(k)fluoranthene       10 U       10 U       11 U       10 U       10 U       10 U         Benzo(a)pyrene       10 U       10 U       11 U       10 U       10 U       10 U         Indeno(1,2,3-cd)pyrene       10 U       10 U       11 U       10 U       10 U       10 U         Dibenz(a,h)anthracene       10 U       10 U       11 U       10 U       10 U       10 U	Chrysene		10 U	11 U	10 U	10 U	10 U
Di-n-octyl phthalate       10 U       10 U       11 U       10 U <td< td=""><td></td><td>9 JB</td><td>20 B</td><td>7 JB</td><td>13 B</td><td>9 JB</td><td>4 JB</td></td<>		9 JB	20 B	7 JB	13 B	9 JB	4 JB
Benzo(b)fluoranthene       10 U       10 U       11 U       10 U <td< td=""><td></td><td></td><td>10 U</td><td>11 U</td><td>10 U</td><td>10 U</td><td>10 U</td></td<>			10 U	11 U	10 U	10 U	10 U
Benzo(k) fluoranthene       10 U       10 U       11 U       10 U       10 U       10 U         Benzo(a) pyrene       10 U       10 U       11 U       10 U       10 U       10 U         Indeno(1,2,3-cd) pyrene       10 U       10 U       11 U       10 U       10 U       10 U         Dibenz(a,h) anthracene       10 U       10 U       11 U       10 U       10 U       10 U	·	_			10 U		10 U
Benzo(a) pyrene         10 U         10 U         11 U         10 U         10 U         10 U           Indeno(1,2,3-cd) pyrene         10 U         10 U         11 U         10 U         10 U         10 U           Dibenz(a,h) anthracene         10 U         10 U         11 U         10 U         10 U         10 U		_	10 U	11 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene       10 U       10 U       11 U       10 U       10 U       10 U         Dibenz(a,h)anthracene       10 U       10 U       11 U       10 U       10 U       10 U		_	10 U	11 U	10 U	10 U	10 U
Dibenz(a,h)anthracene 10 U 10 U 11 U 10 U 10 U 10 U			10 U	11 U	10 U	10 ປ	10 U
		<del></del>	the state of the s		10 U	10 U	10 U
	Benzo(g,h,i)perylene	10U			and the second s	10 U	10 U

Benzo(g,h,i)perylene 10 U 10 U 11 U (1) - Cannot be separated from Diphenylamine.  $\star$ = Outside of EPA CLP QC limits.

#### Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 08/23/02 15:15 Page: 2a Work Order: 11343606001 Client: TNUHANFORD F02-009 H1845 RFW Batch Number: 0207L262

Cust ID:	в153Н3	в153н3	SBLKAO	SBLKAO BS		
Sample RFW#:	006 MS	006 MSD	02LE0866-MB1	02LE0866-MB1		
Information Matrix:	WATER	WATER	WATER	WATER		
D.F.:	1.00	1.00	1.00	1.00		
Units:	ug/L	ug/L	ug/L	ug/L		
Nitrobenzene-d5	64 %	75 %	69 %	82 %		
Surrogate 2-Fluorobiphenyl	64 %	63 %	61 %	64 %		
Recovery Terphenyl-d14	43 %	30 * %	91 %	89 %	*	
Phenol-d5	23 %	74 %	77 %	82 %	A Committee of the Comm	
2-Fluorophenol	37 %	71 %	75 %	78 %		
2,4,6-Tribromophenol	17 %	97 %	88 %	84 %		
		fl	_======f1	L=====================================	=======f1	======================================
Phenol	20 %	63 %	10 U	74 %	$(x_1, \dots, x_n) \in \mathbb{R}^n$	
bis(2-Chloroethyl)ether	20 U	20 Ü	10 U	10 U	7.	
2-Chlorophenol	41 %	70 %	10 U	81 %		
1,3-Dichlorobenzene	20 U	20 U	10 U	10 U		
1,4-Dichlorobenzene	44 %	57 %	10 U	58 %		
1,2-Dichlorobenzene	20 U	20 U	10 U	10 U		
2-Methylphenol	20 U	20 U	10 U	10 U		
2,2'-oxybis(1-Chloropropane)	20 U	20 U	10 U	10 U		
3- and/or 4-Methylphenol	20 ∕Ū	20 U	10 U	10 U		The second second
N-Nitroso-di-n-propylamine	66 %	66 %	10 U	86 %		
Hexachloroethane	20 U	20 U	10 U	10 U		
Nitrobenzene	20 U	20 U	10 U	10 U		
Isophorone	. 20 U	20 U	10 U	10 U		
2-Nitrophenol	20 U	20 U	10 U	10 U		
2,4-Dimethylphenol	20 U	20 U	10 U	10 U		• .
bis(2-Chloroethoxy) methane	20 U	20 U	10 U	10 U		
2,4-Dichlorophenol	20 U	20 U	10 U	10 U	•	
1,2,4-Trichlorobenzene	51 %	64 %	10 U	65 %		
Naphthalene	20 U	20 U	10 U	10 U		e de la companya de l
4-Chloroaniline	20 U	20 U	10 U	10 U		•
Hexachlorobutadiene	20 U	20 U	10 U	10 U		
4-Chloro-3-methylphenol	26 %	84 %	10 U	63 %		
2-Methylnaphthalene	20 U	20 U	10 U	10 U	•	•
Hexachlorocyclopentadiene	20 U	20 U	10 U	10 U		
2,4,6-Trichlorophenol	20 U	20 U	10 U	10 U		
2,4,5-Trichlorophenol	50 U	50 U	. 25 U	25 U		
e, i, o ir remorphisms						•

\*= Outside of EPA CLP QC limits.

Cust ID:

B153H3

Work Order: 11343606001 SBLKAO BS B153H3 SBLKAO

02LE0866-MB1 02LE0866-MB1 006 MSD RFW#: 006 MS Ū 20 U 10 U 10 IJ 2-Chloronaphthalene 20 25 25 11 U 50 TT 50 U 2-Nitroaniline 10 10 U . 11 IJ Dimethylphthalate \_\_\_\_\_ IJ 20 10 : U ΤŦ 20 U 30 13 20 Acenaphthylene 10 10 U 20 U IJ 20 U 2.6-Dinitrotoluene 25 U 25 ŢŢ 11 50 U 50 3-Nitroaniline \_\_\_\_\_ ջ 10 U 78 70 ક્ષ 75 욹 Acenaphthene . LI 50 U 25 IJ 25 2.4-Dinitrophenol 50 ŦŦ 83 \* % 25 Ù 77 75 4-Nitrophenol 10 U 10 17 20 IJ Dibenzofuran 20 ŤΤ 79 9 10 U 79 36 2,4-Dinitrotoluene 10 TT. IJ U 10 U 20 20 Diethylphthalate 10 U IJ 20 П 10 U 4-Chlorophenyl-phenylether 20 10 U 10 U IJ Fluorene\_\_\_\_\_ 20 ŢΤ 20 25 U IJ IJ 25 U 50 4-Nitroaniline 50 U 25 U 25 U 50 T 4,6-Dinitro-2-methylphenol 10 Ü U 10 Ū 20 N-Nitrosodiphenylamine (1) 20 П 20 U 10 U 10 U 4-Bromophenyl-phenylether\_\_\_\_ 20 ŦΤ TT TT 20 U 10 U 1.0 20 Hexachlorobenzene\_\_\_\_ 25 IJ 84 Pentachlorophenol\_\_\_\_\_ 73 34 1.0 13 Phenanthrene\_\_\_\_\_ ŦΤ 20 U 10 IJ 20. 10 U 10 TI 20 IJ 20 ŢŢ Anthracene 10 U 20 U 20 Ť 10 U Carbazole 10 U 10 U Di-n-butylphthalate\_\_\_\_\_ Ţ 20 U 1 10 TT 20 ťΙ 20 U 1.0 U Fluoranthene 10 U 83. 58 r 72 Pyrene 10 U Butylbenzylphthalate 1 J 20 IJ 10 U 3.3'-Dichlorobenzidine ŢŢ 10 II 10 20 IJ 20 IJ 10 U 10 U 20 Benzo (a) anthracene 20 U 10 17 IJ 20 17 10 20 Chrysene 16 11 B bis(2-Ethylhexyl)phthalate 27 В 1.1 ιTΒ 20 IJ 10 U 10 U Di-n-octyl phthalate\_\_\_\_ 20 U 10 U 10 Ü 20 TT Benzo (b) fluoranthene 20 TT. 10 U Benzo(k)fluoranthene\_\_\_\_\_ 17 10 U 20 TT 20 10 U 10 U 20 T 20 Ū Benzo (a) pyrene\_\_\_\_\_ U 10 U 10 U Indeno(1,2,3-cd)pyrene\_\_\_\_ 20 TT 20 10 0 10 U T IJ Dibenz(a,h)anthracene\_\_\_\_\_ 20 20 20 TT U 10 U 20 10 Benzo(q,h,i)perylene (1) - Cannot be separated from Diphenylamine. \*= Outside of EPA CLP QC limits.

CLIENT SAMPLE NO.

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

B153F8	•	

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F02-009 H1845

Matrix: (soil/water) WATER Lab Sample ID: 0207L262-001

Sample wt/vol: 990 (g/mL) ML Lab File ID: A081508

Level: (low/med) LOW Date Received: 07/26/02

% Moisture: \_\_\_\_ decanted: (Y/N) \_\_ Date Extracted: 07/29/02

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/02

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) <u>N</u> pH: 7.0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=======================================				=====
1.	UNKNOWN	3.871	4	J
2.	UNKNOWN	18.858	7	J
3.	UNKNOWN	21.844	2	រ
i i				

#### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

B153F9			

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F02-009 H1845

Matrix: (soil/water) WATER

Lab Sample ID: <u>0207L262-002</u>

Sample wt/vol: 980

(g/mL) <u>ML</u>

Lab File ID: A081509

Level: (low/med) LOW

Date Received: 07/26/02

% Moisture: \_\_\_\_ decanted: (Y/N)\_\_

Date Extracted: <u>07/29/02</u>

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/15/02

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: <u>7.0</u>

Number TICs found: 5

{				
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
x	=======================================		=======================================	==≈==
1.	ORGANIC ACID	17.032	5	J
2.	UNKNOWN	18.880	10	J
3.	ORGANIC ACID	19.012	20	J
4.	UNKNOWN	20.289	9	J
5.	UNKNOWN	20.707	50	J
		]		

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

# TENTATIVELY IDENTIFIED COMPOUNDS

ł				ı
Ì				ŀ
į	B153H0		4	ı
I	DICCIO			ł
İ	,			í
ı				ŧ

CLIENT SAMPLE NO.

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F02-009 H1845

Matrix: (soil/water) WATER

Lab Sample ID: 0207L262-003

Sample wt/vol: 920 (g/mL)  $\underline{ML}$ 

Lab File ID: <u>A081510</u>

Level: (low/med) <u>LOW</u>

Date Received: 07/26/02

% Moisture: \_\_\_\_ decanted: (Y/N)\_\_

Date Extracted: 07/29/02

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 08/15/02

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

Number TICs found: 5

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	ORGANIC ACID	17.035	==============================	]
2.	UNKNOWN	18.883	10	J
3.	ORGANIC ACID	19.009	20	J
4	UNKNOWN	20.286	20	J
5.	UNKNOWN	20.704	100	J.
		<u> </u>		

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B153H1	•		•	
			*	

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F02-009 H1845

Matrix: (soil/water) WATER

Lab Sample ID: 0207L262-004

Sample wt/vol: \_\_960

(g/mL) <u>ML</u>

Lab File ID: A081511

Level: (low/med) LOW

Date Received: 07/26/02

% Moisture: \_\_\_\_ decanted: (Y/N)\_\_

Date Extracted: 07/29/02

Concentrated Extract Volume: 1000 (uL)

Injection Volume: 2.0(uL)

Date Analyzed: 08/15/02

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: \_5

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	~ <del></del>	## <b>=</b> ==##	=======================================	=====
1.	ORGANIC ACID	17.039	6	J
2.	UNKNOWN	18.877	10	J
3.	ORGANIC ACID	19.009	20	J
4	UNKNOWN	20,289	10	J
5.	UNKNOWN	20.700	60	j J
j				ĺ

#### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

B153H2

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F02-009 H1845

Matrix: (soil/water) WATER

Lab Sample ID: <u>0207L262-005</u>

Sample wt/vol: 1000

(g/mL) <u>ML</u>

Lab File ID: A081512

Level: (low/med) LOW

Date Received: 07/26/02

% Moisture: \_\_\_\_ decanted: (Y/N)\_\_\_

Date Extracted: 07/29/02

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 08/15/02

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: <u>7.0</u>

Number TICs found: \_5

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.   2.   3.   4.	ORGANIC ACID UNKNOWN ORGANIC ACID UNKNOWN	17.043 18.887 19.020 20.292	20 30	====##     J     J     J
5.	UNKNOWN	20.698	60 	J   

3/90

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

B153H3				
10110			* 1	

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F02-009 H1845

Matrix: (soil/water) WATER Lab Sample ID: 0207L262-006

Sample wt/vol: 990 (g/mL) ML Lab File ID: A081513

Level: (low/med) LOW Date Received: 07/26/02

% Moisture: \_\_\_\_\_ decanted: (Y/N)\_\_\_ Date Extracted: 07/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/15/02

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: Number TICs found: \_5 (ug/L or ug/Kg) ug/L

	1		1	
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	=   ===================================	======	==========	====:
1.	UNKNOWN	17.033	3	J
2	UNKNOWN	18.877	9	J
3.	ORGANIC ACID	19.010	10	J
4.	UNKNOWN	20.283	9	J
5.	UNKNOWN	20.701	100	J
		}		

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

SBLKAO

CLIENT SAMPLE NO.

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F02-009 H1845

Matrix: (soil/water) WATER

Lab Sample ID: <u>02LE0866-MB1</u>

Sample wt/vol: 1000 (g/mL) ML Lab File ID:

<u> A081505</u>

Level: (low/med) LOW

Date Received: 07/29/02

% Moisture: \_\_\_\_ decanted: (Y/N)\_\_ Date Extracted: 07/29/02

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/15/02

Injection Volume: 2.0(uL)

Number TICs found: 1

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	   Q	
#=========		======		=====	,
1.	UNKNOWN	18.386	30	J	
		[		j	

2072 (			: : :	-	D PERSC		COME	'LETE (	only si	ADED		s DF	FG HI	<u>*</u>				<b>4</b>					ONVIIII	ABORATO	RY INC.
lent TNU-	HA	VFORI,	) 5	JF#	F62-0	009		Refrige	rator #		1	2	2					2							
at. Final Proj oject #	. Samp	ling Date		٠.			· · · · · · · · · · · · · · · · · · ·	#/Type	Container	Liquid Solid	3A6	246	446					116	: <u>.</u>						-
oject #			000 0					ļ		Liquid	30	1	1					500							
nville Labo			lananor	· · · · · · · · · · · · · · · · · · ·	OJ			Volume		Solid															
Spec		DelS	₹D	TAT	30 day	11		Preser	/atives		_	_	-	-1	,			HNO)							
								ANALY	SES			ORG					,	INC							
e Rec'd	ן - '	16-02	Dat	le Due	49-25	-0Z		HEQUE			9	BNA	Pes	Herb				Metal	S				2		
RIX					<del></del>		Matrix					·		1		Lionv	ille La	borate	ry Us	e Oni	y	T			7
Still Solid Solid Sludge	Lab ID		Client	ID/Descript	ion		OC Chosen (レ) S MSD	Matrix	Date Collected	Time Collected	H4290	062514	0608H	OHBGN				METO							
141-1-	001	13/5	3 F8	î	:			1.5	725~2	06.50	3	ス	4					-							
Air	002	,	F9					1	1	0855	3	2	4					1							
Sölids Drim	003		Но		4.					09.20	3	2	4	1				7							
	004		HI							0950	3	2	Ч	_1				/					*		
L	005		1-1-2							1025	3	2	4	-1				1	-						
A11-	006		H3							1055	3	2	4	Н				1							
	007		HH		***					0700	3	.7_	- 4	MH1-	26.05	,									
																									<u> </u>
					,	•						-		ļ ·										<u> </u>	
*.																		<u> </u>					<u></u>		
cial Instruct Rum		SAF	н Foz QC	z - 009	)			/REVISIO		•					1,	1. Fe H9	, K,	1)	mples Shippe and De	were:	lle Labo	Tai	mper Rei Preser	only sistant Se on Ou or	uter
									3		:				er e			_ 2)		nt or S		Pa	ckage Preser	or on C	N ample
									6									-   Ci	ondition Sampl	n office	ir N	Sa	Unbro	ken on	N

FH-Central Platea	u Project	CI	IAIN OF CUST	ODY/S	MPLE	ANALY	YSIS	REQU	JEST		F02-	009-001	Page L o	r 2 ·
Collector GA Thomas, MA Bacchler		Compa	nv Contact Vright	Telephon 373-39	e Na.		7		Coordinate	Pr	ice Code	7N	Data Turn	
Project Designation  ModuTank - Annual Sampling	g of Purgewater	Samoli	ng Location ewater Storage and Trea	tment Facility	/			SAF No F02-009		Ai	r Quality		45 D	ays
Ice Chest No.	E OSPC	Field I	ogbook No. 11 NF - N-314	1 1	COA 117546ES1	0			of Shipme al Express	nf				
Shipped To EBERLINE SERVICES (For	merly TMA)	Offsite	Property No.	"\$NG 1-12-4	) <b>L</b>	·		Bill of I	.ading/Air	Bill No.	_SE	<u> </u>	SP-	
POSSIBLE SAMPLE HAZA	RDS/REMARKS			COOI 4C	Cool 4C	Cool 4C	HNO3 to	nH A	Nane HI	Hq 01 EOV	HNO3 to pH	HNO3 to pH		
**Historical Data indicates the total activity and therefore do i			Preservation	to pH <2			<2		$\rightarrow \downarrow \downarrow$	<7	<2	<2 P		
site shinment Special Handling and/or S			Type of Container	aGs*	aG	eG:	3G		P \	P	P			
Ohecius trumining annion 3	mrage	· .	No. of Container(s)	3	2	4	1		1	V	2			
			Volume	20mL	1000mL	1000mL	500m	ıL I	000mL	1000mL	1000mL	1000mL		
	SAMPLE ANA	LYSIS		VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	Pesticides - 8081; Herbicides - 8150A	ICP Met 6010A (T Mercur 7470 - (t Isotop Plutoni	FAL); CV); ium	tium - H3 An	nericium-24	Gross Bela Gross Bela	Strontium- 89,90 - Total Sr		
Sample No.	Matrix *	Sample Date	Sample Time								24.50 C		TROPING	
B153F8	WATER	7/25/0	2 0650	×	X	Х	χ.							
B153F9	WATER	سنناب الإسراب السيال	5/02										<u> </u>	
B153H0.	WATER	4T 7/2												
B153H1	WATER-	X)T 7/28												ļ
B153H2	WATER	2/7 7/2			<u> </u>	<u> </u>	1							\$ 4-1-1-
CHAIN OF POSSESSIO		Sign/Prin				CIAL INST	PRUCTI	ÓNS	••					Matrix *
Relinquished By/Removed From Greg Thom 41 Fil V Relinquished By/Removed From F	WETternes 7	D	P.f.his	Date/Time &	710							1. **. ***		SE Sediment SO Solid SI Sludge W = Water O-Oil
Rejinginghed By Removed From	Date/Time -21-02 05/10	Received By/Str	red In 7-26 02	Date/Time	٥									A-Air DS-Drum Solids DL-Drum Liquid ToTissue
Relinquished By/Removed From	Date/Time	Received By/Sto	red in	Date/Time								. •		WI=Wips L=Liquid V=Vegetation
Relinguished By/Removed From	Date/Time	Received By/Sto	red in	Date/Time		.*								X=Other
Relinquished By/Removed From	Date/Time	Received By/Sto	red in	Date/Time									· .	
LABORATORY Received B	у			1	itle					-			Date/Time	
FINAL SAMPLE Disposal M DISPOSITION	lethod					Di	isposed By						Date/Time	

	1	
	1	,-سے
	ı	<u>ب</u>
_	 1	~~~
	13	ι .
.1	•	١.

FH-Central Platea	u Project	CF	IAIN OF CUST	<u>rody/s</u>	<u>AMPLE</u>	ANALI	YSIS	<u>KEQUES I</u>		ruz.	-009-001	rage <u>1</u>	·// &
Collector GA Thomas, MA Bacchler			nv Contact Vright	Telenhor 373-39				Project Coordin TRENT, SJ	ator I	rice Code	7N	Data Tur	
Project Designation  ModuTank - Annual Samplin	g of Purgewater	Sampli Purg	ng Location ewater Storage and Trea	ntment Facili	ty			SAF No. F02-009	A	ir Quality		45 I	Days
ice Chest No. SE K	OSPC	Field 1.	nghook No. JF-N-314		COA 117546ES1	0		Method of Shin Federal Expre					
Shipped To EBERLINE SERVICES (For	merly TMA)	Offsite	Property No.	THE 7-22-0	n Po	2018	5	Bill of Lading/	Air Bill No	). S/2	E O	SPC	
POSSIBLE SAMPLE HAZA  **Historical Data indicates the	at samples are less than		Preservation	10014L	Cnal 4C	Coal 4C	HNO3 to	pH None	HNO3 to pH	HNO3 to pH	HNO3 to pH <2		
total activity and therefore do site shimment. Special Handling and/or S		screen for off-	Type of Container	aGs*	aG	aG	вG		P	Þ	p		
	200/406		No. of Container(s)	3 20mL	2 1000mL	4 1000mL	500m	L 1000mL	1000mL	2 1000mL	1000mL		
		<u> </u>	Volume	VOA - 8260A	Semi-VOA	Pesticides -	ICP Met		Americium-2		Strontium-		
	SAMPLE ANAL	LYSIS		A-C	77-E	ROR1; Herbicides - RISOA	6010A (T Mercury 7470 - (C Isotop Plutoni	y CV), ic		Gross Beta	89,90 - Total Sr		
Sample No.	Matrix *	Sample Date	Sample Time				1						
B453F8	WATER	JT 7/25/	2	Distribution ( major 2 major									
B153F9	WATER	7/25/0		×	X	Y	×						:
B153H0	WATER	7/25/02		K	ኢ	*	X						
B153H1	WATER	7/25/0		X	X	Υ	У			<u> </u>			
B153H2	WATER	7/25/0	2 1025	×	×	X	<u>ح</u>					<u> </u>	
CHAIN OF POSSESSIC Relinquished By/Removed From Area Themas XIVI	Date/Time 12.50		ed In, 12CI	Date/Time 1	-0	TAL INSTE	RUCTIC	ONS					Matrix * S=Soil SE=Sediment
Relinquished By/Removed From F RF. Gla RF. 4 Here	Re Date/Time	Received By/Sto	ed in I	Oate/Pime									SO=Solid SI=Studge W = Water O=Oil
	Date/Time 24 VZ 0910	Received By/Ston	7-26	Oate/Time	0	* * * * * * * * * * * * * * * * * * *							A*Air DS=Dram Solids DL=Dram Liquids T«Tissue
Relinquished By/Removed From	Date/Time	Received By/Stor	co & y	Date/Time									WI=Wipe L=Liquid V=Vegetation
Relinquished By/Removed From	Date/Fime	Received By/Stoi		Date/Time				##. 			7		X=Other
Relinquished By/Removed From	Date/Time	Received BA/MO	cum 1.	MICH HINE								. <u> </u>	
LABORATORY Received B SECTION	y			Т	itle						D	Date/Time	
FINAL SAMPLE Disposal M DISPOSITION	fethod					Dispo	osed By				E	Onte/Time	

FH-Central Plat	teau Project		СНА	IN OF CUST	TODY/S	AMPLÉ	ANAL'	YSIS	RI	EQUEST		F02	-009-001	Page 2	of <u>2</u>
Collector - GA Thomas, MA Bacchle	я	Con	nnanv C S Wrigi	Contact	Telenhon 373-39	ie No.			Pro	olect Coordin ENT, SJ	lator	rice Code	7N		rnaround
Project Designation ModuTank - Annual Samp	pling of Purgewater	Sar	nnling I Jurgewa	Location ter Storage and Trea	atment Facilit	у				F No. 2-009	A	ir Quality		45 !	Days
Ice Chest No.	SEEDSPO	Fie		nink No. 5 - No. 314   1		COA 117546ES1	0			thod of Shini Federal Expres					
Shipped To EBERLINE SERVICES (	(Formerly TMA)	on	site Pro	perty No.	100 7-27·	n			Bill	H of Lading/	Air Bill No.	. ZE	EK O	SPC	
POSSIBLE SAMPLE HA	AZARDS/REMARKS es that samples are less than	2000 nCi/a			(00) 4C	Ceol 4C	Cool 4C	HNO3 to		FNone	HNO3 to pH		HNO3 to pH		
	do not require a RCF rad s		<u>                                     </u>	Preservation	to pH <2 Game	яG	аG	<2 aG		P	P P	<2 P	<2 P	30 (1)	<del>                                     </del>
Special Handling and/o	· <del>-</del>		-	ype of Container  o. of Container(s)	3	2	4	1	•	1	1	2			
	C0014°0			Volume	20mL	1000mL	1000mL	500n	пL	1000mL	1000mL	1000mL	1000mL		
	SAMPLE ANAL	.YSIS			VOA-8260A (TCL)	Semi-VOA - 8270A (TCL)	Pesticides - 8081; Herhicides - 8150A	ICP Mer 6010A (1 Mercut 7470 - (1 Isotot Pluton	TAL); ry (CV); pic	Tritium - H3	Americium-24	Gross Alpha Gross Beta	Strontium- 89,90 Total Sr		
Sample No.	Matrix *	Sample Da	ate	Sample Time											
B153H3	WATER	7/2	5	1655	ж	х	Χ_	X							
		<del> </del>	<u> </u>		<u> </u>	<del> </del>		┼				<del> </del>			<del>                                     </del>
				<del>                                     </del>				<del>                                     </del>	<del></del>	-		1			<del> </del>
CHAIN OF POSSES	SION	Sign/P	rint Na	mes		SPEC	CIAL INSTE	RUCTIO	ONS					,	Matrix *
Relinquished By/Removed From Conference of Chamas Fol 2 Relinquished By/Removed From Conference of C	Justhemas 7/256	Received By	eca c	3 Februs 7	intertime [2 i 2 5 con	-06		- * * - \$				e e			S=Soit SE=Sediment SO=Solid SI=Sludge W = Water O=Oit
Relinguisted By/Reinnved From	Date/Time 226.02 0910	Received By/		27-260	Date/Time をつう(	0	•								A=Air DS=Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Removed From	Date/Time	Received By	/Stored In	D کے ا	Date/Time										Wi=Wipc L±Liquid V=Vegetation
Relinquished By/Removed From	Date/Time	Received By	/Stored In	D	Date/Time								And the second		X=Other
Relinquished By/Removed From	Date/Γime	Received By	/Stored In	Ď	Date/Time					· · ·	 <del>_</del>	·			
LABORATORY Receive SECTION	ed By		<del></del>		Tit	ile							\- I	Date/Time	
FINAL SAMPLE Dispose DISPOSITION	sal Method						Dispe	osed By					1	Date/Time	

	Date/Time					Disposed By	Dispo					hoid	FINAL SAMPLE Disposal Method
	Date/Time	rd.						tle .	Title				LABORATORY Received By SECTION
									Date Time	-	Received By/Stored In	Date/Time	Relinquished By/Removed From
X=Other					• :		*		Date/Fine		Received By/Stored in	Date/Time	Relinquished By/Removed From
Wt=Wipe L=Liquid		· .							Date/Timo	-	Received By/Stored In	Dale/Time	Relinquished By/Removed From
DS=Drum Solids DL=Drum Diquids T=Tissue	٠								Date/Time	7-26.05	Reserved By Stored Th	Date/Time	7 mm
Si=Sulage W = Water O=On	: .								Jate/Time	<b>X</b>	Received By/Stored-In	( 2 Date/Time 1 405	Relingfiished By/Removed From EF
S=Solt SE=Sediment SO=Solid		·.						4 0 P	Date/Inne 1.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Dale Time 1205	Religioushed By Removed From
Matrix *	-					RUCTIONS	SPECIAL INSTR				Sign/Print Names		CHAIN OF POSSESSION
							·						
									×	0700	7/25/02	WATER	B153H4
0.00										Sample Time	Sample Date	Matrix *	Sample No.
									7				
				······································					<u>م</u>		SIS	SAMPLE ANALYSIS	
									VOA - 8260A (TCL)				
									40mL	Volume			/
			<i>n</i> - 2						3	No. of Container(s)	No.	1-14 SC	Special manufacture Summer of the Special Control of the Special Con
									#Gs*	Type of Container			site shinnent
									HCl to pH <2 Coal 4C	Preservation		samples are less than 20	**Historical Data indicates that samples are less than 2000 pCVg total activity and therefore do not reactive a RCF rad screen for off-
	057	11	-\r				و	50186	F) \$ =		Company of the state of the sta	orly TMA)	EBERLINE SERVICES (Formerly TMA)
		)	ā l	Air Bill 7	Bill of Lading/Air Bill No.				}	erty No.	Offsite Property No.		L
	•			ment ss	Method of Shipment Federal Express	Met	0	COA 117546ES10		اران عاط ا	Field Logbook No.	ひ250 上 ひ300	Ice Chest No.
45 Days	45	<u></u>	Air Quality		No.	SAF No. F02-009		<b>y</b>	itment Facilit	Sampling Location Purgewater Storage and Treatment Facility	Sampling La	of Furgewater	Project Designation Modulank - Annual Sampling of Purgewater
<u>-</u>	Data Tu	Z	Price Code	pater	Project Coordinator TRENT, SJ	Pro TRE		94	Telephone No. 373-3994	nntact	Company Contact CS Wright		Callector GA Thomas, MA Bacchier
of 1	Раде 1	F02-009-002	F02		REQUEST	YSIS RE	ANAL	MPLE	/S/AdO.	CHAIN OF CUSTODY/SAMPLE	CHAII	Project	FH-Central Plateau Project

Authorized Shipping Signature

Contractor		OFF-SITE	(To be obtained from PROPER	O. RTY MANAGEMENT)
BHI-HANFORD	PRO	PERTY CONTROL		185
Bill-tiziti otto		the same state of the same of the same state of		$\frac{\pi \circ \mathcal{I}}{\mathcal{I}}$
• 6		I - TO BE COMPLETED BY OR		
Je Lingineering Suppor	. Fiel	d Analytical Support	Field Sampling Supp	
The following iter	ns are to be shipped from		Vendor	
Routing FED E	X	Y Prepaid	Collect	
Shipped to RECRA LAB N	· ·	Off-site Cust	odian	
Company 208 WELSH PO LIONVILLE, P.	and the second of the second o			
Address ATTN: ORLET	· ·	On-site Cust	odian	HID
City		State Zip Code		
Country (610) 280-3012				
Qty. Property No.	Descrip	ion (include Manufacture Name, i	Model, Serial No.)	Acquisition Cost
10F6 77163 51	1L 421 SA	FB02-024 and	F02-009	
2096 82165 EF	RC 96-018	SAF FOZ-OU9		
		SAF FOR -009		
J. a. l	<del>-</del>	SAFFORGOT		
ام خسا		SAFF02-001		
	RC 96-064		afb 7905 7105	7415
	IW Ca :			7426
	·	41 ←	16 7905 7105	174
Classified Tunc	lassified	d Under DOE Contract	Shipped Under Contractor's Use Perm	nit Contract
Necessity for the off-site use of the Required for Project W	The first of the control of the cont	料る	off 7904 9856	9703
Business Trip	<del></del>	# H	off 7905 7105	7492
Off-site Assignment				
Shipment to Subcontra	ctor. List Subcontract No.	# 5	dh 7904 985	6 4747
Other (Please specify)			. off 790 5 7105	
ENV <del>IRONMENTAI</del>	CAMPLEC DACI			
POLYCOOLER WI				
			E SAME DAY THAT MATERIAL IS DELIVE	RED TO SHIPPING.
RM Clearance for Public Release	NA	RM Survey NA		Date
Location of and Contact for Prope	erty (Name/Phone No./Bldd	j./Area)		
R. Fill _ 37/			/3728 BUILDING/300 AREA	
Date Ready for Shipment		ost Code to be Charged	Approximate Date This Property will be Returned	
7.25.82 Originated By	<u> </u>	X E 2035 PHMC ate Authorized By		T Date
TR C 044				Date
Property Representative Signatur		7-25-0 Property Mana	gement Approval	Date
P 5000		7.25.02	<del>-</del>	
Je. Fane	<del></del>	TII - TO BE COMPLETED BY SH	IIPPING	<u> </u>

7-25-02

Date

# LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

CLIENT:

HANGERE

Purchase Order/Project:

DATE: 7-2602

SAF#/ SOW# / Release #:

FOR-009

Laboratory SDG #:

02076262

1.	Custody seals on coolers or shipping	□Xes	Ū No	□ N/A	☐ see Comment #
1.	container intact, signed and dated?	-J		W 11/2	Li see Connient w
2.	Outside of coolers or shipping containers are free from damage?	DYes	□ No	□ N/A	☐ see Comment #
3.	Airbill # recorded?	D/Yes	□ No	□ N/A	☐ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data,	DYes	□ No	□ N/A	☐ see Comment #
	alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)				
5.	Sample containers are intact?	D Yes	□ No	□ N/A	See Comment #
6.	Custody seals on sample containers intact, signed and dated?	Dies	□ No	D N/A	□ see Comment #
7_	All samples on coc received?	Z Yes	□ No	□ N/A	🗆 see Comment #
8.	All sample label information matches coc?	□ Yes	□ No	O N/A	☐ see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	□ Yes	□ N <sub>0</sub>	DNIA	See Comment #
10.	Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	⊠Yes	□ No	D N/A	□ see Comment #
11.	Where applicable, bar code labels are affixed to coc?	□ Yes	□ No	EI N/A	see Comment #
12.	coc signed and dated?	-El Yes	□ No	□ N/A	☐ see Comment #
13.	coc faxed or emailed to client?	□ Yes	□ No	□ N/A	□ see Comment #
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	□ Yes	□ No	□ N/A	□ see Comment #

Cooler # / temp and Comments:

441, 45 224 29 96-064 49

22:007 47

76-018 2.5

Laboratory Sample Custodian:

Laboratory Project Manager:

24

# Lionville Laboratory, Inc. PEST/PCB ANALYTICAL DATA PACKAGE FOR TNUHANFORD F02-009 H1845

DATE RECEIVED: 07/26/02 LVL LOT # :0207L262

CLIENT	ID	:			LVL	# .	•	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
			* * * * * * * * * * * * * * * * * * * *	-	•						· · · · · ·	
B153F8					001			W	02LE0895	07/25/02	08/01/02	08/09/02
B153F8					001	MS		W	02LE0895	07/25/02	08/01/02	08/09/02
B153F8					001	MSD	•	W	02LE0895	07/25/02	08/01/02	08/09/02
B153F9	* -				002			W	02LE0895	07/25/02	08/01/02	08/09/02
B153H0					003			W	02LE0895	07/25/02	08/01/02	08/09/02
B153H1					004			W	02LE0895	07/25/02	08/01/02	08/09/02
B153H2					005			W	02LE0895	07/25/02	08/01/02	08/09/02
B153H3			•		006			W	02LE0895	07/25/02	08/01/02	08/09/02
LAB OC:	•											
						·			•	1		
	٠.				* .					1		
PBLKWL PBLKWL		•			MB1 MB1	BS		W	02LE0895 02LE0895	N/A N/A	08/01/02 08/01/02	08/09/02 08/09/02

Appell 10





**Analytical Report** 

Client: TNU-HANFORD F02-009

LVL#: 0207L262

SDG/SAF #: H1845/F02-057

W.O. #: 11343-606-001-9999-00

Date Received: 07-26-02

#### PESTICIDE

The set of samples consisted of six (6) water samples collected on 07-25-02.

The samples and their associated QC samples were extracted on 08-01-02 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 08-09-02. The extraction procedure was based on method 3510 and the extracts were analyzed based on method 8081.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 2. All required holding times for extraction and analysis have been met.
- The method blank was below the reporting limits for all target compounds. 3.
- All surrogate recoveries were within acceptance criteria.. 4.
- 5. All blank spike recoveries were within acceptance criteria.
- All matrix spike recoveries were within acceptance criteria. 6.
- All initial calibrations associated with this data set were within acceptance criteria. 7.
- All continuing calibration standards analyzed prior to sample extracts were within acceptance 8. criteria.
- 9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

pef\r:\group\data\pest\ttuu hanford\07L-262.pes

Lionville Laboratory Incorporated

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 13

## Lionville Laboratory Incorporated

#### GLOSSARY OF PESTICIDE/PCB DATA

# DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

### **ABBREVIATIONS**

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- **DF** = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.

# Lionville Laboratory Incorporated

### GLOSSARY OF PESTICIDE/PCB DATA

- This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- This flag applies to a compound that has been confirmed by GC/MS.

L-WI-035/A-O4/01



#### Lionville Laboratory, Inc.

RFW Batch Number: 0207L262

4,4'-DDD

Endrin aldehyde\_\_\_\_\_

Endosulfan sulfate

Methoxychlor

alpha-Chlordane

gamma-Chlordane

Toxaphene

4,4'-DDT

Endrin ketone

Pesticide/PCBs by GC, CLP List

Client: TNUHANFORD F02-009 H1845 Work Order: 11343606001 Page: 1\_

0.21 U

0.21 U

1.1 U

0.21 U

0.21 U

0.11 U

0.11 U

11 U

99

0.10 U

0.10 U

0.10 U

0.51 U

0.10 U

0.10 U

0.051 U

0.051 U

5.1 U

B153F8 B153F8 B153F9 B153H0 B153H1 Cust ID: B153F8 RFW#: 001 001 MS 001 MSD 002 003 004 Sample WATER WATER WATER 3 WATER WATER Information Matrix: WATER 1.00 1.00 1.00 1.00 D.F.: 1.00 1.00 UG/L UG/L Units: UG/L UG/L UG/L UG/L 65 8 65 75 ٠ 115 2 Tetrachloro-m-xvlene 110 ۶. 110 Surrogate: 110 1.05 뫗 115 ş 105 110 앍 Decachlorobiohenvl 105 ۶ 0.11 U 0.050 U 0.053 0.052 IJ 0.10 U 0.051 U IJ Alpha-BHC 0.051 U 0.050 U 0.053 Beta-BHC 0.11 U H 0.052 U 0.10 U 0.050 U 0.053 U 0.052 0.10 U 0.11 U 0.051 U Delta-BHC U 왕 0.051 U 0.050 U 0.053 U gamma-BHC (Lindane) 0.052 108 왕 114  $\mathbf{U}^{-}$ 0.050 U 0.053 0.052 U 102 108 0.051 U Ħ Heptachlor 108 왕 0.051 U 0.050 U 0.053 0.052 102 IJ Aldrin U Heptachlor epoxide 0.052 TI 0.10 U 0.11 U 0.051 U 0.050 U 0.053 TT Endosulfan I\_\_\_\_\_ 0.051 U 0.050 U 0.053 U 0.052 U 0.10 U 0 11 U Dieldrin 0.10 11 0.10 0 116 119 0.11 [7] 0.10 U 4,4'-DDE 0.10 U 0.20 U 0.21 U -0.10 U 0.10 U 0.11 U Endrin\_\_\_\_\_ 0.10 U 122 125 0.10 U 0.10 U 0.11 U Endosulfan II\_\_\_\_\_ 0.21 U 0.10 U 0.10 U 0.11 0.10 U 0.20 U IJ

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

0.20 U

0.20 U

1.0 U

0,20 U

0.20 U

0.10 U

0.10 U

10 U

103

0.10 U

0.10 U

0.10 U

0.10 U

0.10 U

0.052 U

0.052 U

5.2 U

U

0.52

Aladisla.

0.10 U

0.10 U

0.10 U

0.50 U

0.10 U

0.10 U

0.050 U

0.050 U

5.0 U

0.11 U

0.11 U

0.11 Ü

0.53 U

0.11 U

5.3 U

U

U

U

0.11

0.053

0.053

Report Date: 08/14/02 15:26

Pesticide/PCBs by GC, CLP List

RFW Batch Number: 0207L262 Client: TNUHANFORD F02-009 H1845 Work Order: 11343606001 Page: 2

Cust ID:	В153Н2	в153н3 г	BIKMI	PBLKWL BS	
Sample RFW#: Information Matrix: D.F.: Units:	005 WATER 1.00 UG/L	006 ( WATER 1.00 UG/L	02LE0895-MB1 WATER 1.00 UG/L	02LE0895-MB1 WATER 1.00 UG/L	
Surrogate: Tetrachloro-m-xylene Decachlorobiphenyl	60 % 105 %	55 % 100 %	100 % 95 %	85 % 90 %	
Alpha-BHC	0.051 U	0.052 U	0.050 ·U	0.050 U	
Beta-BHC	0.051 U	0.052 U	0.050 U	0.050 U	
Delta-BHC	0.051 U	0.052 U	0.050 U	0.050 U	
gamma-BHC (Lindane)	0.051 U	0.052 U	0.050 U	106 %	
Heptachlor	0.051 U	0.052 U	0.050 U	98 %	
Aldrin	0.051 U	0.052 U	0.050 U	98 %	
Heptachlor epoxide	0.051 U	0.052 U	0.050 U	0.050 U	A Committee of the Comm
Endosulfan I	0.051 U	0.052 U	0.050 U	0.050 U	
Dieldrin	0.10 U	0.10 U	0.10 U	114 %	
4,4'-DDE	0.10 U	0.10 U	0.10 U	0.10 U	
Endrin	0.10 U	0.10 U	0.10 U	118 %	
Endosulfan II	0.10 U	0.10 U	0.10 U	0.10 U	
4,4'-DDD	0.10 U	0.10 U	0.10 U	0.10 U	
Endosulfan sulfate	0.10 U	0.10 U	0.10 U	0.10 U	
4,4'-DDT	0.10 U	0.10 U	0.10 U	99 %	
Methoxychlor	0.51 U	0.52 U	0.50 U	0.50 U	
Endrin ketone	0.10 U	0.10 U	0.10 U	0.10 U	
Endrin aldehyde	0.10 U	0.10 U	0.10 U	0.10 U	
alpha-Chlordane	0.051 U	0.052 U	0.050 U	0.050 U	
gamma-Chlordane	0.051 U	0.052 U	0.050 U	0.050 U	
Toxaphene	5.1 U	5.2 U	5.0 U	5.0 U	

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

April 515

(0)

Report Date: 08/14/02 15:26

TNU	- HA	VFORI	) , 50	FH F	-M	7		Refrige	ator #	<del>, , , , , , , , , , , , , , , , , , , </del>	A-C	2	FG HI 2	7		· .		2	1						
		oling Date		7. 71	1 <i>0</i> - UV	<del> </del>		#/Tuno	Container	Liquid	3A6						111	1AG		and miles					
ect #		11343-	606-00	1-9999.	00	1.		ттуро	Container	Solid		- 14						2/12		aras.				100	
•		ne#	•	<u> </u>		··		Volume		Liquid	മ	L	L					500		Maria da esta esta esta esta esta esta esta est	واللبد		<u>ئە ئائدىن</u>	ور درون درون درون درون درون	10000
ville Labo	oratory		lanager		0J					Solid		-	A11 11 A		-			de			en de la	in and the		26.2	20.2
Spec		Del	<u> 40 1</u>	AT2	O days	<del>, , , , , , , , , , , , , , , , , , , </del>		Preserv	atives				ANIC					HW0)	5000,21 L						
Rec'd	7-	26-02	Date	Due	B-25-0	7 2	<b>L</b>	ANALY REQUE		<b>-</b>	§ §	5 ¥ A		Herb			•	F Set 2							
RIX						M	atrix							1	<b>-4</b>	Liony	فسيد فأعا	borate		e Onl	<u>y</u>	1	<u>                                      </u>		1
ES: Soil Sediment Solid	Lab ID		Client ID	/Description		Ch	OC osen ビ)	Matrix	Dațe Collected	Time Collected	H 3290	H 5290	J608 H	OHBG	<u> </u>			METO			-				
Sludge Water Oil	001	13/5	3F8			MS	MSD	LA	72502	06.50		2	4	-1				7							
Air Drum	002	,	F9						711	0855	3	2	4	1				7							
Solids	003		Но	7						0920	3	2	ų	-1				1							
Liquids EP/TCLP	004		HI		<u> </u>					0950	3	2	4	(				1			e .				
Leachate Wipe	005		H2			a an arrive		 		1025	3	2	4	4				ì						Tarana ngalana	
Other Fish	006		H3			Single on the				1055	3	2	4	ii)				1							
· · · · · · · · · · · · · · · · · · ·	007		НЧ				ر المناسب والما		1	0700	3	-75	14	Mth.	24.40							1	<u> </u>		
											نسنك												-	ļ	
			and a market have																						
											<u> </u>		<u> </u>				<u> </u>		<u> </u>						
cial instruct	lions:	SAF .	4 FOZ	-009		:	DATE/	REVISION	vs: 1. Al, /	4. B.	Ba	$\rho_{\alpha}$	CI	Car		.: Fa	r			Llonvi	lle Lab	oratory	/ Use O	nly	
Rim	. Mai	this c	2c			:	8-1	5-0z	2 Mg.	Mn. 1	Va 1BG	N 4 N;	Sb.	V, Z	n X	Hg		-   1)  -   Hi   Ai	mples Shippe and Del bill # _	ivered		1) Pa 2)	mper Res Presen ackage Unbrok	ton Or or cen on	uter N Outer
									<b>4.</b>	· .	<u> </u>			- 1 m		1944 1	<u> </u>	_ 2) 3)	Ambie Receiv	nt or 6	AMED Good		eckage Presen		ample

	u Project	TC	HAIN OF CUST	ODY/S/	MPLE	ANALY	ISIS I	REQUEST		F02-0	009-001	Page L	of 2
ollector GA Thomas, MA Bacchler		Comp	anv Contact Wright	Telephon 373-39	e No.		1	Project Coordinator TRENT, SJ		Price Code	N Data Turnar		4
olect Designation ModuTank - Annual Sampling	of Purgewater		Sampling Location Purgewater Storage and Treatment Facility					SAF No. F02-009		Air Quality		45 1	)ays
Chest No. SE	e ospa	Field	Logbook No. HNF-N-314	COA 117546ES10			Method of Shinment Federal Express						
nioned To EBERLINE SERVICES (Form	nerly TMA)	onsit	e Property No.	#n51-12-0	L			Bill of Lading/	Air Bill	No. SE	<u> </u>	<u> </u>	<del></del>
OSSIBLE SAMPLE HAZAR *Historical Data indicates tha	it samples are less than		Preservation	COOI 4C HCI	Cool 4C	Coal 4C	HNO3 to	pH Mane	H(NO) (a	рН HNO3 10 рН <2	HNO3 to pH <2		
otal activity and therefore do n ite shipment pecial Handling and/or St		screen for off-	Type of Container	aGs*	аG	aG	вG	9	P	P	P		
harms samuring and the De	W Age		No. of Container(s)	3	2	4		1	1	2	1000 1		
			Volume	20mL	1000mL	1000mL	500m		1000n		1000mL	<u></u>	
				VÓA - 8260A (TCL)	Semi-VOA - R270A (TCL)	Pesticides - 8081; Herbicides -	ICP Met 6010A (T Mercury	AL);	Americius	Gross Bels	Strontium- 89,90 Total Sr		*
	SAMPLE ANAI	YSIS		A-C	DE	#150A	7470 - (C Isotopi Plutoni	ic ium		<b>4</b> 17	7/25%		
Sample No.	Matrix *	Sample Date	Sample Time		- 3"								
53F8	WATER	7/25/0	2 0650	×	×	×	Ĺź						
<del>53F9</del>	WATER	- 45T 71	5/02										
53H0	WATER		5/04						<u> </u>		<u> </u>		
	WATER_		5/02										
63H1-													
	WATER	1 ATT 7/2	5/021	1	1								Matrix *
	N	Sign/Pri	5/02 nt Names	_l		CIAL INST	RUCTIO	ONS					(VIIII)
linquished By/Removed From  Greg Thomas FN J  linquished By/Removed From F	N Questime 27	Sign/Fri 10 Received By/St 25/42 R . F -	nt Names  ored in ERE D  RU R. C. h 1s  gred in D	Pate/Time of 7 - 25	710	CIAL INST	RUCTIO	ONS					S-Soil SE~Sodiment SO-Soild SI~Studge W = Water
CHAIN OF POSSESSION inquished By/Removed From Expression By/Removed From By/Removed From By/Removed From Expression By/Removed From By/R	N OpterTime G7  Control of the Time  7.256 144  DaterTime	Sign/Pri 10 Received By/St 25/2 17 F Received By/St Received By/St	nt Names  ored in ERE D  RU R.F. h Is  ored in D  Ext	7 - 25 )ale/Time	710	CIAL INSTI	RUCTIO	ons					S-Soil SE-Sodiment SO-Solid Si-Studge W - Water O-Oil A-Air DS-Dhum-Solid DL-Dram Liqu
CHAIN OF POSSESSION Inquished By/Removed From Free Land By/Removed From Inquished By/Removed From Inquished By/Removed From Inquished By/Removed From	N Date/Time 0.7 St. T. Date/Time 140 2.256140	Sign/Pri 10 Received By/St 25/2 17 F Received By/St Received By/St	nt Names  ored in FRED  RU R.f. h 1  ored in D  FAC  ored in D  TAC  TAC  TAC  TAC  TAC  TAC  TAC  TA	7 - 25 )ale/Time	710	CIAL INSTI	RUCTIO	ONS					S-Soil SE-Sodinient SC-Soild SI-Studge W = Water O-Oil A-Air DS-Dhum-Soil DL-Cham-Liqu T-Tissue W/E-Wipe L-Liquid
CHAIN OF POSSESSIO inquished By/Removed From Inquished By/Removed From E	N Ogje/Time 0.7 W. Marker 7/ R. Date/Time 7.256 140 Date/Time 31-02 6/10	Sign/Pri 10 Received By/St 25/62 77 F Received By/St Received By/St Received By/St	ored in FR Dored in FR Cored i	7 - 25 Date/Time Date/Time	710	CIAL INSTI	RUCTIO	ONS					S-Soil SE-Sodiment SO-Solld SI-Studge W = Water O-Oil A-Air DS-Dham-Solid DL-Oram Liqu T-Tisstipe W1=Wipe

Disposed By

Date/Time

Disposal Method

FINAL SAMPLE DISPOSITION

FH-Central Platea	u Project	CI	IAIN OF CUST	ODY/S	AMPLE	<b>ANAL</b>	YSIS	RE(	<b>DUEST</b>		F02	-009-001	Page 1	of <u>2</u>
Collector GA Thomas, MA Bacchier		Comba	nv Contact Vright	Telephon 373-39	e No.				ct Coordit	antor	Price Code 7N		Data Tur	
Project Designation  ModuTank - Annual Sampling	g of Purgewater		ing Location sewater Storage and Trea	itment Facilit	у			F02-009			r Quality 🔲		45 1	Days
Ice Chest No. SE K	OSPC		oghook No. NF-N-314 1		COA 117546ES1	0	• •		od of Ship Ieral Expre				· 	
Shipped To EBERLINE SERVICES (For	merly TMA)	Offsito	Property No.	TWG 7-22-0	Ro	2018	5	Bill c	of Lading/	Air Bill No.	5/	EE O	SPC	
POSSIBLE SAMPLE HAZA **Historical Data indicates the	ut samples are less than		Preservation	(00) 4L HCI - H000- to pH <2 <del>000</del>	Cool 4C	Cool 4C	HNO3 to	pΗ	None	HNO3 to pH	HNO3 to pH	HNO3 to pH		
total activity and therefore do r site shipment. Special Handling and/or S		screen for off-	Type of Container	aGs*	aG	аG	aG		P	Р	Р	Р		
	2001406		No. of Container(s)	3 20mL	2 1000mL	4 1000mL	500m	E ·	1 1000mL	1000mL	1000mL	1 1000mL		
			Volume	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	Pesticides - 8081;	ICP Mete		Tritium - H3	Americism-24	Gross Aipha; Gross Beta	Strontium- 89,90 Total		
	SAMPLE ANAL	.ysis		A-C	カーモ	Herbicides - 8150A FG	Mercarry 7470 - (C Isotopi Plutania	y - CV); ic				1/25/02		
Sample No.	Matrix *	Sample Date	Sample Time											
B458F8	WATER	SAT 7/25/	02											
B153F9	WATER	7/25/0		×	K	Y	×							
B153H0	WATER	7/25/02		ĸ	×	×	×							
B153H1	WATER	7/25/0		X	x	Y	×							
B153H2	WATER	7/25/0		r		X	≻					<u> </u>	, ,	
CHAIN OF POSSESSIO Relinquished By/Removed From	Date/Time 12.00		red in E AL T	Onte/Time 1		IAL INSTI	RUCTIC	ONS						Matrix * S=Soil SE=Sodiment
Relinquished By/Removed From E REFOLE RE-HILLING Relinquished By/Benoved From	Pale/Time	Received By/Sto	ed in Ex	7-2	<b>5.0</b> 2									SO-Solid SI-Sindge W = Water O-Oll A-Air DS=Dnum Solids
Relinquished By/Removed From	Date/Time	Received By/Sto	red in ()	OZ 09/ Date/Time	0						•			DL=Drim Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation
Relinquished By/Removed From	Date/Time	Received By/Sto		Date/Time							41 -			X=Other
Relinquished By/Removed From	Date/Time	Received By/Sto	red in I	Date/Time										
LABORATORY Received By SECTION	y			Ti	tle								Date/Time	
FINAL SAMPLE Disposal M DISPOSITION	effied					Disp	osed By						Date/Time	

FH-Central Plateau	u Project	CI	HAIN OF CUST	ODY/S	AMPLE	ANAL	YSIS I	REQUEST	<u> </u>	F02	-009-001	Page 2	of <u>2</u>
Collector GA Thomas, MA Baechler			nhv Contact Wright	Telephon 373-39				Project Coordi FRENT, SJ	nator P	Price Code 7N		Data Turnaroun 45 Days	
Project Designation  ModuTank - Annual Sampling	g of Purgewater		ing Location gewater Storage and Trea	tment Facilit	у			SAF No. F02-009		Air Quality 🔲		45 Days	
Ice Chest No.	EE OSPC	Field I	Field Logbook No. COA HNF - N - 314 1 117546ES10				1	Method of Shin Federal Expre					
Shinned To EBERLINE SERVICES (Form	nerly TMA)	Offsite	Property No.	-100 T-23	n			Bill of Lading/	Air Bill No	<u> </u>	e o	SPC	
POSSIBLE SAMPLE HAZAF	RDS/REMARKS			C0014L									
**Historical Data indicates tha total activity and therefore do n			Preservation	to pH <2 Com	Cool 4C	Copl 4C	HNO3 to p		HNO3 to pH	<2	HNO3 to pH		
site shirment. Special Handling and/or St			Type of Container	aGs*	aG 2	aG 4	aG	- P	Р	P 2	P.		
	00/400		No. of Container(s)	3			1						
			Volume	20mL	1000mL	1000mL	500mL	, 1000mL	1000mL	1000mL	1000mL		
	SAMPLE ANALY	sis		VOA - 8260A (TCL)	Semi-VOA- 8270A (TCL)	Pesticides - 80R1; Herbicides - 8150A	ICP Metal 6010A (TA Mercury 7470 - (C) Isotopic Plutonius	L); v);	Americium-24	Gross Alphs Gross Beta	Strontium- 89,90 Total Sr		
Sample No.	Matrix *	Sample Date	Sample Time	Wedney	(Fr. 1877)		prince.		18-9		1.50		
B153H3	WATER	7/25	1655	X	Ж	X	x						
							<u> </u>						
							<b> </b>				<b>_</b>	7 .	ļ
		<u> </u>		<del> </del>									
CHAIN OF POSSESSIO		Sign/Prin	4 Northean		loppe	IAL INST	DUCTIO	NG .	<del></del>		<u></u>		Matrix *
Religioushed By/Removed From Fig. & DDS Religioushed By/Removed From Religioushed By/Removed From Religioushed By/Removed From	Date/Time 12to of Page Time 1908	Received By/Sto	red in C 7 26 6	1.25.01 Pate/Time	.00								S=Soil SE=Stediment SO=Solid SI=Studge W = Water O=Oil A=Atr DS=Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Removed From	Date/Time	Received By/Sto		)ate/Time						e e e		•	Wi=Wipe L=Liquid V=Vegetation
Relinquished By/Removed From	Date/Time	Received By/Sto	ieu m	hte/Time									X=Other
Relinquished By/Removed From	Date/Time	Received By/Sto	red in	)ate/Time						· · · · · · · · · · · · · · · · · · ·			<u> </u>
LABORATORY Received By SECTION	7	,		Ti	ite					Na article		Date/Time	
FINAL SAMPLE Disposal Me DISPOSITION	ethod				1.	Disp	osed By					Date/Time	

FH-Central Platea	u Project	C	HAIN OF CUST	CODY/S	AMPLI	ANAL	YSIS	ŔĖ	<b>OUES</b> 1		F(	)2-009-002	Page 1	of 1
Collector  GA Thomas, MA Bacchler			any Contact Wright	Telepho 373-3					ect Coordi NT, SJ	nator	Price Code 7N			rúarouad T
Project Designation  ModuTank - Annual Sampling	g of Purgewater	Samp Pur	Sampling Location Purgewater Storage and Treatment Facility				· .	SAF No. F02-009			Air Quality 🗍		45 Days	
Ice Chest No.	Easic	Field 14	Logbook No. NF - N. 314 1		CÓA 117546ES	10			od of Shin deral Expre		:			
Shinned To EBERLINE SERVICES (For			e Property No.	Ab	2 ا ت	<b>1</b> 5		Bill	of Lading/	Air Bill N	io.	FE	051	<del>ک</del> ر
POSSIBLE SAMPLE HAZAI	RDS/REMARKS													
**Historical Data indicates that total activity and therefore do n	Preservation	HCl to pH <2 Cool 4C					<u> </u>							
site shipment. Special Handling and/or St		<b>V</b>	Type of Container	aGs*										
· · · · · · · · · · · · · · · · · · ·	30146		No. of Container(s)	3	:	·								
			Volume	40mL										
	SAMPLE ANALY	/sis		VOA - 8260A (TCL)										
Sample No.	Matrix *	Sample Date	Sample Time										Para de	
B153H4	WATER	7/25/0	2 0700	X										
									· · · · · · · · · · · · · · · · · · ·	<u> </u>				
							<b>_</b>						1	
- <del></del>	<u>_</u>													
CHAIN OF POSSESSIO		Sign/Pri	nt Names		CDE	CIAL INSTI	PUCTIO	)NS		<u> </u>				Matrix *
Relinguished By/Removed From Circly Thomas FM. Relinguished By/Removed From EF	Date/Time 1205	Received By/Sto	ored in ERC D	ate/Time 1	200	CIAL BIOLI	NOC IN	0110						S=Soil SE=Sedimont SO=Solid SI=Sindge W = Water O=Oil
Reliminished Bullemoved From	Date/Time	Received By/Sto	red (1) 7-26 0	eate/Time Z 09/0	,									A=Air DS=Dnim Solids DL=Dnim Liquids T=Tissue
Relinquished By/Removed From	Date/Time	Received By/Sto		ate/Time	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2									Wi=Wipe L=Uiquid V=Vegetation X=Other
Relinquished By/Removed From	Date/Time	Received By/Sto		Pate/Time				٠						
LABORATORY Received By SECTION				Т	itle								Date/Time	<u> </u>
FINAL SAMPLE Disposal Me DISPOSITION	ethod					Disp	osed By			<del>,</del>			Date/Time	

# OFF-SITE

(To be obtained from PROPERTY MANAGEMENT)

BHI-HANFORD		PR	OPERIY	CONTI	ROL	- Annual Control	F	10020	18 D
		4	ART I - TO BE			GINATOR		-11	
e Lagineering S	apport	r.	ield Anal	yticai Su	pport -		rieid Sam	oling Suppo	nt .
The folio	wing items ar	e to be shipped t	from	X Cor	ntractor	☐ Ven	dor		
Routing	FED EX			X Pre	paid	Col	lect		
	LAB NET	DO A D		C	off-site Custo	odian			11.
LIONVI	LSH POOL ! LLE, PA 19:		•						
ddress ATTN: (	ORLETTE J		State	Zip Code	n-site Custo	dian	· · · · · · · · · · · · · · · · · · ·		HID
ity ountry (610) 28(	-3012		ا کست	L.p 0000	-	•			
Ity. Property No.	<del></del>	Desc	cription (includ	de Manufacti	ure Name, l	lodel, Ser	ial No.)	<del></del>	Acquisition Cos
, F6 77163			AF BO		<del></del>			<del></del>	
of6 82165	- 1, -		A1 50	, , , , , ,	40001	L O. ~	-001		
	Enc	96-018	• •	- FOZ	-009		*		
FG 75 165		96.014		FOR					
of 6 78 163	, <b>,</b>	02-007	SA	ELOS.	009				
FG 72165	SML	441	SA	FFOZ-	00)	·.			
of 74 16	FRC	76-064	SAF	for o	•१ मा	af b	7905	7105	7415
					· .		7905		
Classified	<b>X</b> Unclassifi	ied [] Shir	ped Under D	OE Contract		<del> </del>	ed Under Contra		L
cessity for the off-site			ped Grider D	OE COMITACE					
	Project Work. 1		, 	· · · · · · · · · · · · · · · · · · ·	- 44つ	od 6	7704	9856	7205
☐ Business Trip					# 4	of 6	7905	7105	7492
Off-site Assign	nment	•			د <b>ا</b>				
Shipment to S	Subcontractor.	List Subcontract I	No		- W 5	cof h	7904	9850	6 4747
Other (Please	specify)		,					and the second s	7573
ENIVEDANDE	NITT A T CLA	ACDI PICINA	OVA CIPID	N' TRT	· · · · · · · · · · · · · · · · · · ·				/
ENV <del>IRONME</del> POLYCOOLE									<del></del>
			<u> </u>					<del></del>	
	<del></del>		4.						·····
ERTIFICATION OF T		N MONITORING	RELEASE MO	,,		SAME D	AY THAT MATE	RIAL IS DELIVE	RED TO SHIPPIN
Clearance for Public	ReleaseNA			RM Survey	NA.			<del></del>	Date
calion of and Contact	for Property /A	lame/Phone No./I	diala Wrood				*		
2/100	374.4	لحا		OREN/5	<del>21-800</del> 3/	3728 B	UILDING/	00 AREA	
te Ready for Shipmer		, 50	Cost Code t	to be Charge	ed .		Approximate D	ate This	
7.25 0	2		XES	2035 1	PHME		Property will be	Returned	
ginated By	1		Date	Auti	horized By				Date
perty Representative	Signature		7.25.		perty Manag	ement An	nroval		Date
R.G.	~ ~	•	7.25.0		of		profession .		0010
	2	P/	ART II - TO B		TED BY SHI	PPING	<del></del>	····	<u> </u>
horized Shipping Sign	Jeturg / A								Date
( 'K	. Kelm				i,	٠.	4		7-75-12

## LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

Purchase Order/Project:

DATE: 7-2602

SAF#/SOW#/Release #: FO2 - 009

Laboratory SDG #:

Laboratory SDG #: O207C 262

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPL

ી.	Custody seals on coolers or shipping	□ Xes	□ No	□ N/A	☐ see Comment #
	container intact, signed and dated?		Mark Indiana. Mark Indiana		
2	Outside of coolers or shipping containers are	DV es	□ No	□ N/A	☐ see Comment #
	free from damage?				
. 3.	Airbill # recorded?	IJ Yes	□ No	□ N/A	D see Comment #
4.	All expected paperwork received (coc and	D/Yes	□ No	□ N/A	
	other client specific: historical data, alpha/beta or other screening data as	<b>7</b> 103	₩ 140	U IVA	D see Comment #
	applicable)? (paperwork sealed in plastic bag and taped to inside lid)				
5.	Sample containers are intact?			<u>-</u>	
٠.		IZ Yes	□ No	□ N/A	□ see Comment #
6.	Custody seals on sample containers intact, signed and dated?	D/Yes	□ No	□ N/A	□ see Comment #
7.	All samples on coc received?	☑ Yes	□ No	□ N/A	☐ see Comment #
8.	All sample label information matches coc?	□ Yes	□ No	□ N/A	□ see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	□ Yes	□ No	DVN/A	☐ see Comment #
10.	Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	12 Yes	□ No	□ N/A	See Comment #
,					
11.	Where applicable, bar code labels are affixed to coc?	□ Yes	□ No	ETN/A	D see Comment #
12.	coc signed and dated?	-E Yes	□ No	□ N/A	☐ see Comment #
13.	coc faxed or emailed to client?	□ Yes	□ No	□ N/A	☐ see Comment #
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	□ Yes	□ No	□ N/A	☐ see Comment #

Cooler # / temp and Comments:

96-064

Laboratory Sample Custodian:

Laboratory Project Manager:

# Lionville Laboratory, Inc. HBG ANALYTICAL DATA PACKAGE FOR TNUHANFORD F02-009 H1845

DATE RECEIVED: 07/26/02 LVL LOT # :0207L262

B153F9     002     W 02LE0884 07/25/02 07/30/02 08/23       B153H0     003     W 02LE0884 07/25/02 07/30/02 08/23       B153H1     004     W 02LE0884 07/25/02 07/30/02 08/23       B153H2     005     W 02LE0884 07/25/02 07/30/02 08/23	XTR/PREP ANALYSIS	COLLECTION	PREP #	MTX	<b>#</b>	LVL	ID	CLIENT
B153F9       002       W 02LE0884 07/25/02 07/30/02 08/23         B153H0       003       W 02LE0884 07/25/02 07/30/02 08/23         B153H1       004       W 02LE0884 07/25/02 07/30/02 08/23         B153H2       005       W 02LE0884 07/25/02 07/30/02 08/23		***				<del></del>		
B153F9       002       W 02LE0884 07/25/02 07/30/02 08/23         B153H0       003       W 02LE0884 07/25/02 07/30/02 08/23         B153H1       004       W 02LE0884 07/25/02 07/30/02 08/23         B153H2       005       W 02LE0884 07/25/02 07/30/02 08/23						٠	100	4 1
B153H0       003       W 02LE0884 07/25/02 07/30/02 08/23         B153H1       004       W 02LE0884 07/25/02 07/30/02 08/23         B153H2       005       W 02LE0884 07/25/02 07/30/02 08/23	07/30/02 08/23/02	07/25/02	02LE0884	W		001		B153F8
B153H0       003       W 02LE0884 07/25/02 07/30/02 08/23         B153H1       004       W 02LE0884 07/25/02 07/30/02 08/23         B153H2       005       W 02LE0884 07/25/02 07/30/02 08/23	07/30/02 08/23/02	07/25/02	02LE0884	W	•	002		B153F9
B153H1 004 W 02LE0884 07/25/02 07/30/02 08/23 B153H2 005 W 02LE0884 07/25/02 07/30/02 08/23		07/25/02	02LE0884	W		003		B153H0
		07/25/02	02LE0884	W	•	004		B153H1
B153H3 006 W 02LE0884 07/25/02 07/30/02 08/23	07/30/02 08/23/02	07/25/02	02LE0884	W		0.05	T.	B153H2
	07/30/02 08/23/02	07/25/02	02LE0884	W		006		B153H3
		07/25/02	02LE0884	W	MS	006		B153H3
B153H3 006 MSD W 02LE0884 07/25/02 07/30/02 08/24	07/30/02 08/24/02	07/25/02	02LE0884	W	MSD	006		B153H3
LAB QC:			· •	•	•			T. N.B. 400 •
THE AC:								THE QC:
			•					
PBLKYL MB1 W 02LE0884 N/A 07/30/02 08/23	07/30/02 08/23/02	N/A	02LE0884	W		MB1	$\boldsymbol{\cdot} = (\cdot,\cdot)_{i=1}^{n} \cdot \cdot \cdot$	PBLKYL
		· .	02LE0884	W	BS	MB1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	PBLKYL
		· .	02LE0884	W				PBLKYL
		and the second of the second o	02LE0884	W.	BS	MB1		PBLKYL







**Analytical Report** 

Client: TNU-HANFORD F02-009

LVL#: 0207L262

SDG/SAF#: H1845/F02-009

W.O.#: 11343-606-001-9999-00

Date Received: 07-26-02

#### HERBICIDE

The set of samples consisted of six (6) water samples collected on 07-25-02.

The samples and their associated QC samples were extracted on 07-30-02 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 08-23,24-02. The extraction and analysis procedure was based on method 8151A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 2. All required holding times for extraction and analysis have been met.
- 3. The method blank was below the reporting limits for all target compounds.
- 4. Four (4) of ten (10) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 5. All blank spike recoveries were within acceptance criteria.
- 6. All matrix spike recoveries were within acceptance criteria.
- 7. All initial calibrations associated with this data set were within acceptance criteria.
- 8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

pef\r:\group\data\herb\tmu 07L-262 doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 12 pages.

Lionville Laboratory Sample Discrepancy Repor	t (SDR) SDF	R#: 0266 391
Initiator: hype Soutono Batch: 0207LZ62  Date: sl27loz Samples: 001, 003, 8, 65  Client: 700 Northand Method: sweether CAWWICLPI	Parameter: Matrix: Prep Batch:	Water Water
Transcription Error Wrong Test Code  b. General Discrepancy  Missing Sample/Extract Container Broken Wrong S  Hold Time Exceeded Insufficient Sample Preserva  Improper Bottle Type Not Amenable to Analysis		-C Label ID's Illegible Received Past Hold
Note: Verified by [Log-In] or [Prep Group] (circle)signature/date:  c. Problem (Include all relevant specific results; attach data if necessary)  high surrogate recoveries in samples 001, 003, Blank  necoveries are good, all samples are clear.	and BS. All	then
ACCOMPLICA MILE MAN, MIL SAMPLE OF MEN.		
2. Known or Probable Causes(s)		
3. Discussion and Proposed Action  Re-log Entire Batch Following Samples: Re-leach Re-extract Re-digest Revise EDD Change Test Code to Place On/Take Off Hold (circle)	A	
4. Project Manager Instructionssignature/date: Concur with Proposed Action; Disagree with Proposed Action; See Instruction Include in Case Narrative Client Contacted: Date/Person Add Cancel	8128101	
5. Final Actionsignature/date:  Verified re-[log][leach][extract][digest][analysis] (circle)  Included in Case Narrative  Hard Copy COC Revised  Electronic COC Revised  EDD Corrections Completed  When Final Action has been recorded, forward original to QA Specialist f		ling.
Route Distribution of Completed SDR Route Distribution of X Initiator Met X Lab General Manager. M. Taylor Inor X Project Mgr: Stone/Johnson/Haslett GC/X Technical Mgr: Wesson/Daniels MS: X QA (file) Log	ution of <u>Completed</u> SD als: Beegle ganic: Perrone /LC: Kiger Rychlak/Layman -in: Melnic nin: Soos	

QA-105-A-0801

# Lionville Laboratory Incorporated

#### GLOSSARY OF PESTICIDE/PCB DATA

# DATA QUALIFIERS

- Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- 1 = Interference.

### **ABBREVIATIONS**

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.

# Lionville Laboratory Incorporated

### GLOSSARY OF PESTICIDE/PCB DATA

- This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- This flag applies to a compound that has been confirmed by GC/MS.

L-WI-035/A-O4/01



Herbicides, Special List

Report Date: 08/27/02 08:45

RFW Batch Number: 0207L262 Client: TNUHANFORD F02-009 H1845 Work Order: 11343606001 Page: 1 Cust ID: B153F8 B153F9 B153H0 B153H1 B153H2 B153H3 Sample 001 002 RFW#: 003 004 005 006 Information Matrix: WATER WATER WATER WATER WATER WATER D.F.: 1.00 1.00 1.00 1.00 1.00 1.00 Units: ug/L uq/L ug/L uq/L ug/L ug/L Surrogate: DCAA 127 \* % 107 134 \* % 120 86 69 2,4-D -1.0 U 1.0 U 1.0 U 1.0 U 1.0 U 1.0 U 2,4,5-TP (Silvex) 0.50 U 0.50 U 0.50 U 0.51 U 0.50 U 0.50 U 2,4,5-T 0.50 U 0.50 U 0.50 U 0.51 U 0.50 U 0.50 U Cust ID: B153H3 B153H3 PBLKYL PBLKYL BS Sample RFW#: 006 MS 006 MSD 02LE0884-MB1 02LE0884-MB1 Information Matrix: WATER WATER WATER WATER D.F. 1.00 1.00 1.00 1.00 Units: ug/L uq/L ug/L uq/L Surrogate: DCAA 82 126 \* % 88 144 \* % 2,4-D 91 86 1.0 U 130 2,4,5-TP (Silvex) 70 68 0.50 U 129

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. \*= Outside of EPA CLP QC

0.50 U

130

70

80

2,4,5-T

12072			Cus		7	100				ord/L ONLY SI	HADED	ARE/		FG.		es	<b>t</b> Pa	age_	ا ب	i <u> </u>	***	-		V	ABORAICE	A ING
Client TNU	1191	VFOR	5 50	Fu 6	= -	-M9			Refrige	rator #			2	2	4		<del>, , , , , , , , , , , , , , , , , , , </del>		2	·		1				
Est. Final Pro	. Samp	oling Dat	e		· .		· · · · · · · · · · · · · · · · · · ·			Container	Liquid Solid	300		446	1				IA G		,		5.			
Project #	the state of the state of				1- 00	· · · · · · · · · · · · · · · · · · ·	·				Liquid	1	7	7					500							<del></del>
roject Conta					0.5				Volume		Solid	שמ						1 2	,							
ic Spec	ratory	Del	wanager	ΔT	30 1	Ke I	· ·		Preserv	vatives .		-	-	F	1				HNO	1.11					r el	
	<del></del>	<u> </u>	<del></del> !			7		-		·oco			<del></del>	ANIC	·					RG						<del></del>
)ate Rec'd	7-1	26-02	Date	Due	· 6 - 6	25-0	2.		ANALY REQUE		i	Ş	S A A	Pest/	Herb				Meda L	1						, :
IATRIX			-					trix					-	: 			Lionv	ille La	borate	ory Us	se Onl	y	Į.		<del></del>	
ODES: - Soil E - Sediment O - Solid	Lab ID		Client ID	/Descriptio	in .	-	Cha (v	)	Matrix	Date Collected	Time Collected	O624H	D625H	7608н	OHECAX	<b>9</b>			Dr. 3W							
L - Sludge		12 1	53 F8	-			MS	MSD		7000	0650	1	2	4	<u>-</u>				-	1	-					
10.0	001	6)/-	F9					-	<u>. [4],</u>	72502	0855	2	2	4							1	-	<u> </u>			
S - Drum Şolids	003								+		0920		2	4					\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		-		ļ			-
Liquids	004	<del> </del>	Ho	· · · ·					-	++	0950	3	1	ч			, i		-			+-	-		100	
1			H1	<u> </u>		•				<del>1   -                                  </del>	1025	3	2	4	٦				1			<del> </del>	-	<b> </b>		-
- Other	005 006	-	<i>H3</i>	***************************************	<del></del>		V. 342		1	+	1055	3	2	U	1				1	-		-				-
- Fish	007		H4	······································		<u> </u>	7		1	11	5700	+		1	104	26.00	,		1						<del></del>	
	<u> </u>			<del></del>	<del></del>					10.				,											7	
	<del></del>		-						<del></del>																	
				<u> </u>		11.1													1							
pecial instruct	lons:	SAF	4 FOZ	-009				DATE/	TEVISIO	ns: 1. Al, /	4g , Ba	, Be	, Ca,	Cd.	Co.(	cr.C	n Fe	K			Lionvi	lle Lab		Use O	<del></del>	
Rim	Mat	riv I	ac							2. Mg 3. Chan	Ma.	Va.	N:	56.	V. ž	<u> </u>	Hg		-   1) H Ai	Shipp	ed elivered		1) Pa 2)	Imper Res Presen ackage Unbrok	t on Out or on on O	uter N Outer
			,			ئىي			· · · · · · · · · · · · · · · · · · ·	4. <u> </u>	7.0								_ 2)	Ambie Recei	entor 6 ved in (	3ood	3)	ackage Presen Unbrok	on Sa Or	
Relinquished	<del>- T</del>	Receiv by	ed D	ate	Γime	Re	lingui: by	shed	T	6 Received by	OBIG	Date	Ti	ne		repanci ples La			= ṕ		Preser	or N	S	ampleC OC Rec pon San	or Ford Pre	sent oc't
<del></del>	- 1 -	-7	724	+	3.14	-	1 187	OMP			HUTTHE	11/1/	Y <b>=</b> -		COC	, Becci	d? Y	or A		Recel	ved Wit	thin			(Y) or 4.8	

FH-Central Plateau Project	CHAIN OF CUST	ODY/S	AMPLE	ANALY	YSIS I	REQUES	T	F02	-009-001	Page L (	or 2
Collector GA Thomas, MA Bacchier	Company Contact CS Wright	Telephon 373-39	c No.			Protect Coor TRENT, SJ		Price Code	7N	Data Turi	1
Project Designation  ModuTank - Annual Sampling of Purgewater	Sampling Location Purgewater Storage and Treat	tment Facilit	<u>y</u>			SAF No. F02-009		Air Quality		45 L	rays
Ice Chest No. SEE OSPC	Field Logbook No.		COA 117546ES1	0		Method of Si Federal Ex					
Shipped To EBERLINE SERVICES (Formerly TMA)	Offsite Property No.	Thre 1-12-1	) <b>L</b>			Bill of Ladir	ıg/Air Bill	No. SE	FEO	SP=_	
POSSIBLE SAMPLE HAZARDS/REMARKS **Historical Data indicates that samples are less than 2000 pC	i/o	COOI 4L	Cool 4C	Cool 4C	HINO3 to	рН Мада	16003 10	pH HNO3 to pH	HyO3 to pH		
total activity and therefore do not require a RCF rad screen for site shimment	off Preservation  Type of Container	to pH <2	aG	aG	sG	-	4	P	P		
Special Handling and/or Storage	No. of Container(s)	3	2	4		ı		2	1000-1		
	Volume	20mi_	1000mL	1000mL	500m				1000mL Strontium		
SAMPLE ANALYSIS		VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	Pessicides - 8081; Herbicides - 8150A	(CP Met 6010A (T Mercur 7470 - (C Isotop Pluroni	AL); y - ic um	H3 Americiu	m-241 Gross Night Gross Ben	89,93 Total		
Sample No. Matrix * Sam	ple Date Sample Time										
	125/02 0650	<u>×</u>	×	Х	L x						
8153F9 WATER - 2)7	7/25/02	<u> </u>						<del></del>		<del> </del>	
RISSHO WATER 47	7/25/04	<del> </del>	<del></del>	<b> </b> -	╃—	<del></del>			_		<del>                                     </del>
B163H1 WATER MT	7/25/02			<u> </u>	-		<del></del>				
B153H2 WATER ST	7/25/02		<u> </u>								Matrix *
Relinquished By/Removed From Dute/Time 2710 Received From LR Date/Time 2715/22 Relinquished By/Removed From LR Date/Time Received From LR Date/Time 27.25 6 1400	Sign/Print Names  ved By/Stored in ERC D  R. F. R. R. F. h Is  ved By/Stored in C  Feel Ex	Pate/Time 07-25 Date/Time		CIAL INST	RUCTIO	UNS					S=Soit SE=Sediment SO=Solid SI=Sludg= W = Water O=Oit
Recipionished By Removed From Date/Time Receip	Theres 7-26 02	Date/Time 67/ Date/Time	0								A-Air DS=Drum Schids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid
Relinquished By/Removed From Date/Time Recei	ved By/Stored In	Date/Time								j.	V=Vegetation X=Other
Relinquished By/Removed From Date/Time Recei	ved By/Stored In 1	Date/Time		·.	,			_			
LABORATORY Received By SECTION		- T	ine					·		Date/Time	
FINAL SAMPLE Disposal Method DISPOSITION				Dis	sposed By					Date/Time	

FH-Central Plates	u Project	CI	HAIN OF CUST	TODY/S	<b>AMPLÉ</b>	ANAL	YSIS	<b>REQUES</b>	r	F02	-009-001	Page 1	of. 2
Collector GA Thomas, MA Baechler		Comps	nny Confact Vright	Telenhor 373-39	e No.			Prolect Coord TRENT, SJ	nator	rice Code	7N	Data Tur	'
Project Designation ModuTank - Annual Samplin	g of Purgewater		ing Location sewater Storage and Tre	atment Facili	у			SAF No. F02-009	A	ir Quality		45 1	Days
Ice Chest No. SE K	OSPC	Field I	oghook No. NF-N-314 1		COA 117546ES	10		Method of Shi Federal Exp		· · · · · · · · · · · · · · · · · · ·			
Shinned To EBERLINE SERVICES (For	merly TMA)	Offsite	Property No.	TWG 7-22-0	n Ro	12018	15	Bill of Lading	/Air Bill No	" <u>5</u> /	EE O	SPC	T
POSSIBLE SAMPLE HAZA **Historical Data indicates th		2000 pCi/g	Preservation	(00)4L HCI	Cool 4C	Coal 4C	HNO3 to	pH Nana	HNO3 to pH	HNO3 to pH	HNO3 to pH <2		
total activity and therefore do site shimment. Special Handling and/or S		screen for off-	Type of Container	aGs*	'aO	аĢ	аG	P	Р	p	P		
	200/406		No. of Container(s)	3 20mL	2 1000mL	4 1000mL	500m	l L 1000mL	1000mL	2 1000mL	1 1000mL		
	SAMPLE ANAL	YSIS	Volume	VOA - 8260A (TCL) A - C	Semi-VOA - 8270A (TCL) 7) - E	Pesticides - 8081; Herbicides - 8150A	IÇP Met 6010A (T Mercury 7470 - (C Isotop Plutoni	AL); [V);  d	Americium-24	Gross Hota	Strontium 89,90 - Total Sr		
Sample No.	Matrix *	Sample Date	Sample Time	\$2 2.1									
D#50F8	WATER	AT 7/25/	32									<b></b>	ļ
B153F9	WATER	7/25/0	2 0855	x	K	Y	×						1
B153H0	WATER	7/25/02	6920	R	χ	×	X.						
B153H1	WATER	7/25/0	2 0950	K	x	4	У						<u> </u>
B153H2	WATER	7/25/0	2 1025	×	×	X	<b>×</b>						<u> </u>
CHAIN OF POSSESSIO		Sign/Prin	t Names		SPEC	CIAL INST	RUCTIO	ons				:	Matrix *
Relinquished By/Removed From Are 1 The MP & Mary Relinquished By/Removed From K. R. F. & N. M. & R. & R. & R. & R. & R. & R. & R.	Re Date/Time 140	Received By/Sto	ed in	Date Pime	5.02								S=Soil SE=Sodiment SO=Solid Si=Sludge W = Water O=Oil A=Air
Relinquisher By/Removed From 7	Date/Time Date/Time	Received By/Sto	7-36	Date/Time OZ 09/ Date/Time	0		• .						DS=Drum Solids DL=Drum Liquic T=Tissue W1=Wipe
Relinquished By/Removed From	Date/Time	Received By/Sto		Date/Fime					· .			: -	L=Liquid V=Vegetation X=Other
Relinquished By/Removed From	Date/Time	Received By/Sto	red In	Date/Time		,							
LABORATORY Received E SECTION	зу			T	ile							Date/Time	·
FINAL SAMPLE Disposal NO DISPOSITION	<b>Aethod</b>					Disp	posed By	· .		· · ·		Date/Time	

FH-Central Plates	au Project	CI	IAIN OF CUS	TODY/S	<b>AMPLE</b>	ANAL	YSI\$	RE	<b>OUEST</b>		F02	-009-001	Page 2	of <u>2</u>
Collector GA Thomas, MA Baechler			nv Contact Vright	Telephor 373-35				TRE	eet Coordii NT, SJ	iator Pi	rice Code	7N		rnaround
Project Designation ModuTank - Annual Samplin	ng of Purgewater		ing Location ewater Storage and Tre	atment Facili	у			SAF F02-		Ai	ir Quality		45 1	Days
Ice Chest No.	EE OSPC	Field I	ngbook No. NF - N - 314	(	COA 117546ES	10	,		hod of Ship deral Expre			, 		
Shinned To EBERLINE SERVICES (For	rmerly TMA)	Offsite	Property No.	4MB 7-33	dr.			Bill	of Lading/	Air Bill No.	SE	EK O	SPC	-
POSSIBLE SAMPLE HAZA  **Historical Data indicates th	hat samples are less than 20	000 pCi/g	Preservation	HCI WHERE	Cool 4C	Cool 4C	HNO3 to	рH	None	HNO3 to pH	HNO3 to pH	HNO3 to pH		
total activity and therefore do site shinment. Special Handling and/or S	not require a RCF rad scre	een for off-	Type of Container	aGs*	аG	aG	aG		P	P	P	Р		
	5.00 1 4°C		No. of Container(s)	3	2 1000mL	4 1000mL	500m		1 1900mL	1000mL	2 1000mL	1 1000mL		
			Volume	20mL VOA - 8260A	Semi-VOA -	Pesticides -	ICP Men		Tritium - H3	Americium-241	Gross Alpha	Strontium-	· ·	
	SAMPLE ANALYS	SIS		A -C	9270A (TCL)	8081; Herbicides - 8150A	6010A (T Mercury 7470 - (C Isotopi Plutoni	AL); y CV); ic	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Gross Beta	Marcon march		
Sample No.	Matrix *	Sample Date	Sample Time			Part of Company of Property of				148.4	l .	6		
B153H3	WATER	7/25	1655	x	_ ×	Χ	L <sub>X</sub>				<b></b>			
				-							<del> </del>			-
	ļ				-		-					<del> </del>	<del> </del>	-
						73.77	<del>                                     </del>				<del> </del>		<del> </del>	<del> </del>
CHAIN OF POSSESSIO	ON	Sign/Prin	t Names		SPEC	IAL INST	RUCTIO	)NS				<del></del>		Matrix *
Relinquished By/Removed From Charg Thomas Fif Aug. Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From	12 Date/Time 1400	Received By/Sjo	red in 27-26	Date/Time [27.25.cs/Date/Time  Date/Time  Date/Time  Date/Time	=									S=Solt SE=Sediment SO=Solid. SI=Studge W = Water O=Oil A=Air DS=Drim Solids DL=Drim Liquid T=Tissue
Relinquished By/Removed From	Date/Time	Received By/Sto		Date/Time		·.			4					Wi=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From	Date/Time	Received By/Sto		Date/Time	ıle							г	Date/Time	
LABORATORY Received B SECTION	<b>Y</b>				u <del>o</del>					· .			and I IIIIG	
FINAL SAMPLE Disposal N DISPOSITION	Method					Disp	osed By					1	Date/Time	

FH-Central Plateau Project	CI	HAIN OF CUST	FODY/S	SAMPLE	ANAL	YSIS	REQU	EST		F02	2-009-002	Page 1	of L
Collector GA Thomas, MA Bacchler		inv Contact Wright	Telepho 373-				Project ( TRENT,	Coordinate SJ	or Pi	rice Code	7N	the second	rnaround .
Project Designation  ModuTank - Annual Sampling of Purgewater		ing Location sewater Storage and Tre	atment Facil	ity			SAF No. F02-009		Ai	ir Quality	/ <u> </u>	45	Days
Ice Chest No. SEE OSPC	Field I	ogbook No. JF - N. 314 1		COA 117546ES	10		1 1 1 1 1 1 1 1	of Shipme Express	nt	· · · · · · · · · · · · · · · · · · ·	<u>,</u>		
Shinned To EBERLINE SERVICES (Formerly TMA)	Offsite	Property No.	Ab	2019	5		Bill of L	ading/Air	Bill No.	2	EF	051	<u>~</u>
POSSIBLE SAMPLE HAZARDS/REMARKS								,					
**Historical Data indicates that samples are less than 2 total activity and therefore do not require a RCF rad sc		Preservation	HCl to pH < Cool 4C aGs*	<u> </u>					•				<b></b>
site shimment. Special Handling and/or Storage		Type of Container	3	<del> </del>		-	_						
cool4°C		No. of Container(s)  Volume	40mL			<del> </del>		<del>-  </del> -			<b> </b>	ļ.,,,,	
SAMPLE ANALY	/sis		VOA - 8260/ (TCL)										
Sample No. Matrix *	Sample Date	Sample Time				1			The second second			a sa ar Lina na sabar.	
B153H4 WATER	7/25/0	L 5700	X										
			<u> </u>	<del> </del>						<u></u>	<del> </del>		
				<del> </del>		-			<del></del>	<u> </u>			
				+		-					<del></del>		
CHAIN OF POSSESSION	Sign/Print	Names	نار	SPE	CIAL INSTI	RUCTIO	NS		<del></del>	<u> </u>			Matrix *
Relinquished By/Removed From Date/Time 1256 Relinguished By/Removed From FR Date/Time 1466 FC Date/Time 1466	Received By/Stor	ed in FR C D	nte/Time 1	200									S=Soil SE=Sediment SO=Solid St=Sludge W = Water O=Oli
Relimpished Bulkemoved From Date/Time	Received By/Stor	206.0		2									A=Ait DS=Drum Solids DL=Drum Liquids
Relinquished By/Removed From Date/Time	Received By/Stor	ed in D	ate/Time										T=fissue W!=Wipe L=Liquid V=Vegetation
Relinquished By/Removed From Date/Time	Received By/Stor		ate/Time								1		X=Other
Relinquished By/Removed From Date/Time	Received By/Stor	ed In D	ate/Time						٠				
LABORATORY Received By SECTION			1	itle								Date/Time	
FINAL SAMPLE Disposal Method DISPOSITION					Disp	osed By						Date/Time	

## LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

CLIENT:

Purchase Order/Project:

DATE: 7-2602

FOZ-009 SAF# / SOW# / Release #:

Laboratory SDG #:

02076 262

NOTE:	ALL ENTRIES MARKED "NO" MUST BE E	XPLAINED II	THE COMM	ENT SECTION	
1.	Custody seals on coolers or shipping container intact, signed and dated?	D <sub>X</sub> es	□ No	□ N/A	☐ see Comment #
2.	Outside of coolers or shipping containers are free from damage?	DVes	□ No	D N/A	□ see Comment #
3.	Airbill # recorded?	DYes	□ No	D N/A	☐ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as	Dies	□ No	□ N/A	See Comment #
	applicable)? (paperwork sealed in plastic bag and taped to inside lid)				
5.	Sample containers are intact?	Yes	□ No	D N/A	☐ see Comment #
6.	Custody seals on sample containers intact, signed and dated?	D Yes	D No	□ N/A	D see Comment #
7.	All samples on coc received?	Yes	□ No	AM 🗆	☐ see Comment #
8.	All sample label information matches coc?	☐ Yes	O No	□ N/A	☐ see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	D Yes	□ No	DINIA	D sec Comment #
10.	Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	Ø Yes	□No	□ N/A	☐ sec Comment #
11.	Where applicable, bar code labels are affixed to coc?	D Yes	D No	DNA	D see Comment #
12.	coc signed and dated?	-El Yes	□ No	□ N/A	☐ see Comment #
13.	coc faxed or emailed to client?	□ Yes	□ No	D N/A	□ see Comment #
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	D Yes	D No	E) N/A	D see Comment #

Cooler # / temp and Comments:

96-064

02.007 96-018

.421

Laboratory Sample Custodian:

Laboratory Project Manager:



DATE RECEIVED: 07/26/02

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
	e e e e e e e e e e e e e e e e e e e					
B153F8	A A Company of the Co				• •	
SILVER, TOTAL	001	W	02L0483	07/25/02	08/21/02	08/22/02
SILVER, TOTAL	001 REP	W	02L0483	07/25/02	08/21/02	08/22/02
ALUMINUM, TOTAL	001	W	02L0483	07/25/02	08/21/02	08/22/02
ALUMINUM, TOTAL	001 REP	W	02L0483	07/25/02	08/21/02	08/22/02
BARIUM, TOTAL	001	W	02L0483	07/25/02	08/21/02	08/22/02
BARIUM, TOTAL	001 REP	M	02L0483	07/25/02	08/21/02	08/22/02
BERYLLIUM, TOTAL	001	W	02L0483	07/25/02	08/21/02	08/22/02
BERYLLIUM, TOTAL	001 REP	W	02L0483	07/25/02	08/21/02	08/22/02
CALCIUM, TOTAL	001	W	02L0483	07/25/02	08/21/02	08/22/02
CALCIUM, TOTAL	001 REP	W	02L0483	07/25/02	08/21/02	08/22/02
CADMIUM, TOTAL	001	W	02L0483	07/25/02	08/21/02	08/22/02
CADMIUM, TOTAL	001 REP	W	02L0483	07/25/02	08/21/02	08/22/02
COBALT, TOTAL	001	M	02L0483	07/25/02	08/21/02	08/22/02
COBALT, TOTAL	001 REP	M	02L0483	07/25/02	08/21/02	08/22/02
CHROMIUM, TOTAL	001	M	02L0483	07/25/02	08/21/02	08/22/02
CHROMIUM, TOTAL	001 REP	W	02L0483	07/25/02	08/21/02	08/22/02
COPPER, TOTAL	001	W	02L0483	07/25/02	08/21/02	08/22/02
COPPER, TOTAL	001 REP	M	02L0483	07/25/02	08/21/02	08/22/02
IRON, TOTAL	001	W	02L0483	07/25/02	08/21/02	08/22/02
IRON, TOTAL	001 REP	W	02L0483	07/25/02	08/21/02	08/22/02
MERCURY, TOTAL	001	W	02C0251	07/25/02	08/19/02	08/20/02
MERCURY, TOTAL	001 REP	W	02C0251	07/25/02	08/19/02	08/20/02
MERCURY, TOTAL	001 MS	W	02C0251	07/25/02	08/19/02	08/20/02
POTASSIUM, TOTAL	001	W	02L0483	07/25/02	08/21/02	08/28/02
POTASSIUM, TOTAL	001 REP	W	02L0483	07/25/02	08/21/02	08/28/02
MAGNESIUM, TOTAL	001	M	02L0483	07/25/02	08/21/02	08/22/02
MAGNESIUM, TOTAL	001 REP	W	02L0483	07/25/02	08/21/02	08/22/02
MANGANESE, TOTAL	001	W	02L0483	07/25/02	08/21/02	08/22/02
MANGANESE, TOTAL	001 REP	M	02L0483	07/25/02	08/21/02	08/22/02
SODIUM, TOTAL	001	M	02L0483	07/25/02	08/21/02	08/28/02
SODIUM, TOTAL	001 REP	W	02L0483	07/25/02	08/21/02	08/28/02
NICKEL, TOTAL	001	M	02L0483	07/25/02	08/21/02	08/22/02
NICKEL, TOTAL	001 REP	W	02L0483	07/25/02	08/21/02	08/22/02
ANTIMONY, TOTAL	001	M	02L0483	07/25/02	08/21/02	08/22/02
ANTIMONY, TOTAL	001 REP	W	02L0483	07/25/02	08/21/02	08/22/02

DATE RECEIVED: 07/26/02

CLIENT ID /ANALYSIS	LVL #	XTM	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
VANADIUM, TOTAL	001	W	02L0483	07/25/02	08/21/02	08/22/02
VANADIUM, TOTAL	001 REP	W	02L0483	07/25/02	08/21/02	08/22/02
ZINC, TOTAL	001	M	02L0483		08/21/02	08/22/02
ZINC, TOTAL	001 REP	M	02L0483	07/25/02	08/21/02	08/22/02
B153F9						
SILVER, TOTAL	002	W	02L0483	07/25/02	08/21/02	08/22/02
SILVER, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/22/02
ALUMINUM, TOTAL	002	W	02L0483	07/25/02	08/21/02	08/22/02
ALUMINUM, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/22/02
BARIUM, TOTAL	002	M	02L0483	07/25/02	08/21/02	08/22/02
BARIUM, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/22/02
BERYLLIUM, TOTAL	002	W	02L0483	07/25/02	08/21/02	08/22/02
BERYLLIUM, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/22/02
CALCIUM, TOTAL	002	M	02L0483	07/25/02	08/21/02	08/22/02
CALCIUM, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/22/02
CADMIUM, TOTAL	002	W	02L0483	07/25/02	08/21/02	08/22/02
CADMIUM, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/22/02
COBALT, TOTAL	002	W	02L0483	07/25/02	08/21/02	08/22/02
COBALT, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/22/02
CHROMIUM, TOTAL	0.02	W	02L0483	07/25/02	08/21/02	08/22/02
CHROMIUM, TOTAL	002 MS	M	02L0483	07/25/02	08/21/02	08/22/02
COPPER, TOTAL	002	W	02L0483	07/25/02	08/21/02	08/22/02
COPPER, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/22/02
IRON, TOTAL	002	M	02L0483	07/25/02	08/21/02	08/22/02
IRON, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/22/02
MERCURY, TOTAL	002	W	02C0251	07/25/02	08/19/02	08/20/02
POTASSIUM, TOTAL	002	M	02L0483	07/25/02	08/21/02	08/28/02
POTASSIUM, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/28/02
MAGNESIUM, TOTAL	002	M	02L0483	07/25/02	08/21/02	08/22/02
MAGNESIUM, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/22/02
MANGANESE, TOTAL	002	W	02L0483	07/25/02	08/21/02	08/22/02
MANGANESE, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/22/02
SODIUM, TOTAL	002	W	02L0483	07/25/02	08/21/02	08/28/02
SODIUM, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/28/02
NICKEL, TOTAL	002	M	02L0483	07/25/02	08/21/02	08/22/02
NICKEL, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/22/02

DATE RECEIVED: 07/26/02

CLIENT ID /ANALYSIS	S LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ANTIMONY, TOTAL	002	W	02L0483	07/25/02	08/21/02	08/22/02
ANTIMONY, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/22/02
VANADIUM, TOTAL	002	W	02L0483	07/25/02	08/21/02	08/22/02
VANADIUM, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/22/02
ZINC, TOTAL	002	M	02L0483	07/25/02	08/21/02	08/22/02
ZINC, TOTAL	002 MS	W	02L0483	07/25/02	08/21/02	08/22/02
B153H0						
SILVER, TOTAL	003	M	02L0483	07/25/02	08/21/02	08/22/02
ALUMINUM, TOTAL	003	W	02L0483	07/25/02	08/21/02	08/22/02
BARIUM, TOTAL	0.03	W	02L0483	07/25/02	08/21/02	08/22/02
BERYLLIUM, TOTAL	003	M	02L0483	07/25/02	08/21/02	08/22/02
CALCIUM, TOTAL	003	W	02L0483	07/25/02	08/21/02	08/22/02
CADMIUM, TOTAL	003	W	02L0483	07/25/02	08/21/02	08/22/02
COBALT, TOTAL	003	W	02L0483	07/25/02	08/21/02	08/22/02
CHROMIUM, TOTAL	0.03	W	02L0483	07/25/02	08/21/02	08/22/02
COPPER, TOTAL	003	W	02L0483	07/25/02	08/21/02	08/22/02
IRON, TOTAL	003	M	02L0483	07/25/02	08/21/02	08/22/02
MERCURY, TOTAL	003	W	02C0251	07/25/02	08/19/02	08/20/02
POTASSIUM, TOTAL	003	W	02L0483	07/25/02	08/21/02	08/28/02
MAGNESIUM, TOTAL	003	W	02L0483	07/25/02	08/21/02	08/22/02
MANGANESE, TOTAL	003	W	02L0483	07/25/02	08/21/02	08/22/02
SODIUM, TOTAL	003	W	02L0483	07/25/02	08/21/02	08/28/02
NICKEL, TOTAL	003	W	02L0483	07/25/02	08/21/02	08/22/02
ANTIMONY, TOTAL	003	W	02L0483	07/25/02	08/21/02	08/22/02
VANADIUM, TOTAL	003	W	02L0483	07/25/02	08/21/02	08/22/02
ZINC, TOTAL	003	M	02L0483	07/25/02	08/21/02	08/22/02
B153H1	t.					
SILVER, TOTAL	004	W	02L0483	07/25/02	08/21/02	08/22/02
ALUMINUM, TOTAL	004	M	02L0483	07/25/02	08/21/02	08/22/02
BARIUM, TOTAL	004	W	02L0483	07/25/02	08/21/02	08/22/02
BERYLLIUM, TOTAL	004	W	02L0483	07/25/02	08/21/02	08/22/02
CALCIUM, TOTAL	004	M	02L0483	07/25/02	08/21/02	08/22/02
CADMIUM, TOTAL	004	W	02L0483	07/25/02	08/21/02	08/22/02
COBALT, TOTAL	004	W	02L0483	07/25/02	08/21/02	08/22/02

DATE RECEIVED: 07/26/02

			1.00			
CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
	· · · · · · · · · · · · · · · · · · ·	<u> </u>				
CHROMIUM, TOTAL	004	··W	02L0483	07/25/02	08/21/02	08/22/02
COPPER, TOTAL	004	W	02L0483	07/25/02	08/21/02	08/22/02
IRON, TOTAL	004	W	02L0483	07/25/02	08/21/02	08/22/02
MERCURY, TOTAL	004	W	02C0251	07/25/02	08/19/02	08/20/02
POTASSIUM, TOTAL	004	W	02L0483	07/25/02	08/21/02	08/28/02
MAGNESIUM, TOTAL	004	W	02L0483	07/25/02	08/21/02	08/22/02
MANGANESE, TOTAL	004	W	02L0483	07/25/02	08/21/02	08/22/02
SODIUM, TOTAL	004	W	02L0483	07/25/02	08/21/02	08/28/02
NICKEL, TOTAL	004	W	02L0483	07/25/02	08/21/02	08/22/02
ANTIMONY, TOTAL	004	M	02L0483	07/25/02	08/21/02	08/22/02
VANADIUM, TOTAL	004	W	02L0483	07/25/02	08/21/02	08/22/02
ZINC, TOTAL	004	W	02L0483	07/25/02	08/21/02	08/22/02
						, , ,
B153H2		·				e e
SILVER, TOTAL	005	W	02L0483	07/25/02	08/21/02	08/22/02
ALUMINUM, TOTAL	005	W	02L0483	07/25/02	08/21/02	08/22/02
BARIUM, TOTAL	005	W	02L0483	07/25/02	08/21/02	08/22/02
BERYLLIUM, TOTAL	005	W	02L0483	07/25/02	08/21/02	08/22/02
CALCIUM, TOTAL	005	W	02L0483	07/25/02	08/21/02	08/22/02
CADMIUM, TOTAL	005	W	02L0483	07/25/02	08/21/02	08/22/02
COBALT, TOTAL	005	W	02L0483	07/25/02	08/21/02	08/22/02
CHROMIUM, TOTAL	005	W	02L0483	07/25/02	08/21/02	08/22/02
COPPER, TOTAL	005	W	02L0483	07/25/02	08/21/02	08/22/02
IRON, TOTAL	005	W	02L0483	07/25/02	08/21/02	08/22/02
MERCURY, TOTAL	005	. W	02C0251	07/25/02	08/19/02	08/20/02
POTASSIUM, TOTAL	005	W	02L0483	07/25/02	08/21/02	08/28/02
MAGNESIUM, TOTAL	005	M	02L0483	07/25/02	08/21/02	08/22/02
MANGANESE, TOTAL	005	W	02L0483	07/25/02	08/21/02	08/22/02
SODIUM, TOTAL	005	M	02L0483	07/25/02	08/21/02	08/28/02
NICKEL, TOTAL	005	W	02L0483	07/25/02	08/21/02	08/22/02
ANTIMONY, TOTAL	005	W	02L0483	07/25/02	08/21/02	08/22/02
VANADIUM, TOTAL	005	W	02L0483	07/25/02	08/21/02	08/22/02
ZINC, TOTAL	005	W	0210483	07/25/02	08/21/02	08/22/02
B153H3					· •	
SILVER, TOTAL	006	W	02L0483	07/25/02	08/21/02	08/22/02
				- , ,	, ,	,,

DATE RECEIVED: 07/26/02

LVL LOT # :0207L262

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
	· ,	<del></del>	. <del></del> .			
ALUMINUM, TOTAL	006	W.	02L0483	07/25/02	08/21/02	08/22/02
BARIUM, TOTAL	006	W	02L0483	07/25/02	08/21/02	08/22/02
BERYLLIUM, TOTAL	006	W	02L0483	07/25/02	08/21/02	08/22/02
CALCIUM, TOTAL	006	W	02L0483	07/25/02	08/21/02	08/22/02
CADMIUM, TOTAL	006	W	02L0483	07/25/02	08/21/02	08/22/02
COBALT, TOTAL	006	W	02L0483	07/25/02	08/21/02	08/22/02
CHROMIUM, TOTAL	006	W	02L0483	07/25/02	08/21/02	08/22/02
COPPER, TOTAL	006	M	02L0483	07/25/02	08/21/02	08/22/02
IRON, TOTAL	006	W	02L0483	07/25/02	08/21/02	08/22/02
MERCURY, TOTAL	006	W	02C0251	07/25/02	08/19/02	08/20/02
POTASSIUM, TOTAL	006	W	02L0483	07/25/02	08/21/02	08/28/02
MAGNESIUM, TOTAL	006	W	02L0483	07/25/02	08/21/02	08/22/02
MANGANESE, TOTAL	006	. <b>M</b>	0210483	07/25/02	08/21/02	08/22/02
SODIUM, TOTAL	006	W	02L0483	07/25/02	08/21/02	08/28/02
NICKEL, TOTAL	006	W	02L0483	07/25/02	08/21/02	08/22/02
ANTIMONY, TOTAL	006	W	02L0483	07/25/02	08/21/02	08/22/02
VANADIUM, TOTAL	006	W	02L0483	07/25/02	08/21/02	08/22/02
ZINC, TOTAL	006	M	02L0483	07/25/02	08/21/02	08/22/02

LAB QC:

						•		
	SILVER LABORATORY	LC1	BS	W	02L0483	N/A	08/21/02	08/22/02
	SILVER, TOTAL	MB1		W	02L0483	N/A	08/21/02	08/22/02
	ALUMINUM LABORTORY	LCI	BS	W	02L0483	N/A	08/21/02	08/22/02
	ALUMINUM, TOTAL	MB1		M	02L0483	N/A	08/21/02	08/22/02
	BARIUM LABORATORY	LC1	BS	W	02L0483	N/A	08/21/02	08/22/02
	BARIUM, TOTAL	MB1	· ':	W	02L0483	N/A	08/21/02	08/22/02
	BERYLLIUM LABORATORY	LC1	BS	M	02L0483	N/A	08/21/02	08/22/02
٠	BERYLLIUM, TOTAL	MB1		W	02L0483	N/A	08/21/02	08/22/02
	CALCIUM LABORATORY	LC1	BS	W	02L0483	N/A	08/21/02	08/22/02
	CALCIUM, TOTAL	MB1		W	02L0483	N/A	08/21/02	08/22/02
	CADMIUM LABORATORY	LC1	BS	W	02L0483	N/A	08/21/02	08/22/02
	CADMIUM, TOTAL	MB1	• . •	W.	02L0483	N/A	08/21/02	08/22/02
	COBALT LABORATORY	LC1	BS	W.	02L0483	N/A	08/21/02	08/22/02
	COBALT, TOTAL	MB1		M.	02L0483	N/A	08/21/02	08/22/02
	CHROMIUM LABORATORY	LC1	BS -	W	02L0483	N/A	08/21/02	08/22/02
	CHROMIUM, TOTAL	MB1		W	02L0483	N/A	08/21/02	08/22/02
	COPPER LABORATORY	LC1	BS	W	02L0483	N/A	08/21/02	08/22/02

DATE RECEIVED: 07/26/02

CLIENT ID /ANALYSIS	TAT #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	MB1	. W	02L0483	n/A	08/21/02	08/22/02
IRON LABORATORY	LC1 BS	W	02L0483	N/A	08/21/02	08/22/02
IRON, TOTAL	MB1	W	02L0483	N/A	08/21/02	08/22/02
MERCURY LABORATORY	LC1 BS	. <b>W</b>	02C0251	N/A	08/19/02	08/20/02
MERCURY, TOTAL	MB1	W	02C0251	N/A	08/19/02	08/20/02
POTASSIUM LABORATORY	LC1 BS	W	02L0483	N/A	08/21/02	08/22/02
POTASSIUM, TOTAL	MB1	w	02L0483	N/A	08/21/02	08/22/02
MAGNESIUM LABORATORY	LC1 BS	W	02L0483	N/A	08/21/02	08/22/02
MAGNESIUM, TOTAL	MB1	W	02L0483	N/A	08/21/02	08/22/02
MANGANESE LABORATORY	LC1 BS	M	02L0483	N/A	08/21/02	08/22/02
MANGANESE, TOTAL	MB1	W	02L0483	N/A	08/21/02	08/22/02
SODIUM LABORATORY	LC1 BS	W	02L0483	N/A	08/21/02	08/22/02
SODIUM, TOTAL	MB1	W	02L0483	N/A	08/21/02	08/22/02
NICKEL LABORATORY	LC1 BS	W	02L0483	N/A	08/21/02	08/22/02
NICKEL, TOTAL	MB1	W	02L0483	N/A	08/21/02	08/22/02
ANTIMONY LABORATORY	LC1 BS	W	02L0483	N/A	08/21/02	08/22/02
ANTIMONY, TOTAL	MB1	W	02L0483	N/A	08/21/02	08/22/02
VANADIUM LABORATORY	LC1 BS	W	02L0483	N/A	08/21/02	08/22/02
VANADIUM, TOTAL	MB1	. W	02L0483	N/A	08/21/02	08/22/02
ZINC LABORATORY	LC1 BS	W	02L0483	N/A	08/21/02	08/22/02
ZINC, TOTAL	MB1	W	02L0483	N/A	08/21/02	08/22/02



### **Analytical Report**

Client: TNU-HANFORD F02-009

LVL#: 0207L262

SDG/SAF#: H1845/F02-009

W.O.#: 11343-606-001-9999-00

Date Received: 07-26-02

#### METALS CASE NARRATIVE

1. This narrative covers the analyses of 6 water samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.

All samples except B153F8 had a pH of approximately 9, per pH paper check. The analyst added 2 mL of concentrated Nitric Acid and waited more than 16 hours before removing an aliquot. After the waiting period, the pH was again checked, and found to be approximately 7 on the pH scale. No additional acid was added and digestion began as holding times were getting close.

- 3. All analyses were performed within the required holding times.
- 4. All results presented in this report are derived from samples that met LvLI's sample acceptance policy, with the exception of pH.
- 5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% (80-120% for Mercury) control limits.
- 6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL, or average +/- 3x standard deviation).
- 7. The preparation/method blanks for 3 analytes were outside method criteria. {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
  - a). The MB results for Aluminum and Zinc were greater than the Practical Quantitation Limit (PQL) {3 x the (IDL) Instrument Detection Level} and all samples read less than 20 times the MB concentration. The MB result for Sodium was greater than the PQL and only sample B153F8 read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 27 pages.

- 8. All ICP Interference Check Standards were within control limits.
- 9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
- 10. The matrix spike (MS) recovery for 1 analyte was outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.
- 11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

	•	<u>PDS</u>	<u>PDS</u>
Sample ID	Element	Concentration (ppb)	% Recovery
B153F9	Potassium	50,000	93.8

- 12. The duplicate analyses for 6 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
- 13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
- 14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

jjw/m07-262

08-52-05

Date



## METALS METHOD GLOSSARY

The following mo Lot#: 0707L7U	ethods are used as refe	rence for the digesti	on and analysis	of samples	contained within this
Leaching Proced	ure:13101311	1312Other:	· · · · · · · · · · · · · · · · · · ·		
CLP Metals D	igestion and Analysi	s Methods:ILM(	)3.0ILM04.	.0	
Metals Digestion	Methods:	3010A30153	020A3050B	3051	200.7SS17
	_Other:				
	N.	Ietals Analysis M	ethods	TPD A	
	SW846	EPA	STD MTD	EPA OSWR	USATHAMA-
* * · · · · * * · · · · · · · · · · · ·	<b>≯6010B</b>	200.7		00111	99
Aluminum	№6010B 7041 <sup>5</sup>	200.7 204.2			99
Antimony	6010B 7060A		3113B		
Arsenic		200.7			99
Barium	<u>≁6010B</u>	200.7			99
Beryllium	6010B <sup>1</sup>	200.7		1620	99
Bismuth	6010B	200.7	•		
Boron Codminum	∞6010B 7131A °				
Cadmium Calcium	×6010B/151A				99
Carcium Chromium	~6010B 7191 ⁵	200.7 218.2			SS17
Cobalt	<u>≠</u> 6010B/151	200.7			
	₹6010B 7211 <sup>5</sup>	200.7 220.2			99
Copper I <b>ron</b>	<b>7</b> 6010B/211	200.7			99
Lead	6010B 7421 <sup>5</sup>	200.7 239.2	3113B		99
Lithium	6010B 7430 4	200.7		1620	99
Magnesium	<u>~6010B</u>	200.7			99
Manganese	<del>∕</del> 6010B	200.7			99
Mercury	<u>~</u> 7470A³_7471A				99
Molybdenum	6010B		. :	•	99
Nickel	₹ 6010B	200.7			99
Potassium	<u>×</u> 6010B7610 ⁴	200.7 258.1 4	•		
Rare Earths	6010B 1	200.7 1		1620	99
Selenium	0010B 7740 s	200.7 270.2	3113B		99
Silicon	6010B 1	200.7		1620	99
Silica	6010B	200.7		1620	99
Silver	<del>√</del> 6010B 7761 <sup>5</sup>	200.7 272.2			
	≥ 6010B	200.7 273.1 4	· · ·		99
Sodium	6010B///0	200.72/3.1	:		99
Strontium			200 O		99
Challium r:	6010B7841 *	200.7279.2	euu.7		99
Fin	6010B	200.7	No.		99
litanium	_6010B	200.7		1.670	<del></del>
Jranium	6010B ¹	200.7 1		1620	99
/anadium	≥ 6010B	200.7	•		99
Zinc	<u>≯</u> 6010B	200.7		1.000	99
Zirconium	6010B <sup>1</sup>	200.7 1		1620	99

Method:

Other:

## METHOD REFERENCES AND DATA QUALIFIERS

### DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- \* = Indicates that the original sample result is greater than 4x the spike amount added.

### **ABBREVIATIONS**

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LCS = Laboratory Control Sample.

NC = Not calculated.

### **ANALYTICAL METAL METHODS**

- 1. Not included in the method element list.
- 2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).
- 3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).
- 4. Flame AA.
- 5. Graphite Furnace AA.

RFW 21-21L-033/N-10/96

### INORGANICS DATA SUMMARY REPORT 08/29/02

459

13.7

UG/L

UG/L

0.90 u UG/L

2.2 u UG/L

0.70 u UG/L

CLIENT: TNUHANFORD F02-009 H1845 WORK ORDER: 11343-606-001-9999-00 LVL LOT #: 0207L262

REPORTING

19.1

0.90

2.2

0.70

0.40

DILUTION

1.0

1.0

1.0

1 0

SAMPLE	SITE ID.	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
				=====		
-001	B153F8	Silver, Total	0.50 u	UG/L	0.50	1.0
		Aluminum, Total	8.0 u	UG/L	8.0	1.0
		Barium, Total	0.90	UG/Li	0.10	1.0
		Beryllium, Total	0.10 u	UG/L	0.10	1.0
		Calcium, Total	156	UG/L	37.0	1.0
		Cadmium, Total	0.30 u	UG/L	0.30	1.0
	1	Cobalt, Total	0.70 u	ng/r	0.70	1.0
		Chromium, Total	1.1	UG/L	0.50	1.0
,		Copper, Total	1.5	ng/r	0.30	1.0
		Iron, Total	14.5 u	UG/L	14.5	1.0
		Mercury, Total	0.10 u	UG/L	0.10	1.0
		Potassium, Total	586 น	UG/L	586	1.0
		Magnesium, Total	36.3	UG/L	5.6	1.0
		Manganese, Total	0.70	UG/L	0.10	1.0

Sodium, Total

Nickel, Total

Zinc, Total

Antimony, Total

Vanadium, Total

#### INORGANICS DATA SUMMARY REPORT 08/29/02

CLIENT: TNUHANFORD F02-009 H1845

LVL LOT #: 0207L262

WORK ORDER: 11343-606-001-9999-00

					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
======	25542522255227222					=======
-002	B153F9	Silver, Total	1.9	UG/L	0.50	1.0
		Aluminum, Total	45.2	UG/L	8.0	1.0
7	•	Barium, Total	46.8	UG/L	0.10	1.0
		Beryllium, Total	0.10 u	UG/L	0.10	1.0
		Calcium, Total	2950	UG/L	37.0	1.0
	•	Cadmium, Total	0.30 u	UG/L	. 0.30	1.0
		Cobalt, Total	3.9	UG/L	0.70	1.0
		Chromium, Total	3.2	UG/L	0.50	1.0
		Copper, Total	3.0	ng\r	0.30	1.0
~		Iron, Total	94.4	UG/L	14.5	1.0
	•	Mercury, Total	0.10 и	UG/L	0.10	1.0
		Potaesium, Total	6660000	UG/L	11700	20.0
		Magnesium, Total	58000	UG/L	5.6	1.0
	•	Manganese, Total	64.3	UG/L	0.10	1.0
•		Sodium, Total	1800000	UG/L	382	20.0
		Nickel, Total	193	UG/L	0.90	1.0
		Antimony, Total	5.8	UG/L	2.2	1.0
		Vanadium, Total	0.87	UG/L	0.70	1.0
		Zinc, Total	19.4	UG/L	0.40	1.0

#### INORGANICS DATA SUMMARY REPORT 08/29/02

CLIENT: TNUHANFORD F02-009 H1845

WORK ORDER:	11343-606-001-9999-00

		and the second second	and the second second		REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
=30# <b>#</b> ==	++=====================================	######################################				
-003	B153H0	Silver, Total	3.2	UG/L	0.50	1.0
		Aluminum, Total	25.9	ng\r	8.0	1.0
		Barium, Total	49.6	UG/L	0.10	1.0
		Beryllium, Total	0.10 u	UG/L	0.10	1.0
	•	Calcium, Total	2970	UG/L	37.0	1.0
		Cadmium, Total	0.30 u	UG/L	0.30	1.0
	the state of the s	Cobalt, Total	4.3	UG/L	0.70	1.0
		Chromium, Total	3.0	UG/L	0.50	1.0
		Copper, Total	2.9	UG/L	0.30	1.0
7.		Iron, Total	83.7	UG/L	14.5	1.0
		Mercury, Total	0.10 u	UG/L	0.10	1.0
		Potassium, Total	6900000	UG/L	11700	20.0
		Magnesium, Total	58600	UG/L	5.6	1.0
		Manganese, Total	64.7	UG/L	0.10	1.0
,		Sodium, Total	1870000	UG/L	382	20.0
		Nickel, Total	195	UG/L	0.90	1.0
		Antimony, Total	6.6	UG/L	2.2	1.0
		Vanadium, Total	1.3	UG/L	0.70	1.0
		Zinc, Total	9.3	UG/L	0.40	1.0

#### INORGANICS DATA SUMMARY REPORT 08/29/02

CLIENT: TNUHANFORD F02-009 H1845

LVL LOT #: 0207L262

WORK ORDER: 11343-606-001-9999-00

			•		REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
======	=======================================		=======		========	
-004	B153H1	Silver, Total	1.3	UG/L	0.50	1.0
		Aluminum, Total	14.1	UG/L	8.0	1.0
		Barium, Total	47.1	UG/L	0.10	1.0
		Beryllium, Total	0.10 u	UG/L	0.10	1.0
		Calcium, Total	2990	UG/L	37.0	1.0
		Cadmium, Total	0.30 u	UG/L	0.30	1.0
		Cobalt, Total	3.3	UG/L	0.70	1.0
		Chromium, Total	2.3	UG/L	0.50	1.0
		Copper, Total	2.2	UG/L	0.30	1.0
		Iron, Total	90.7	UG/L	14.5	1.0
	ė.	Mercury, Total	0.10 u	UG/L	0.10	1.0
	•	Potassium, Total	6730000	UG/L	11700	20.0
		Magnesium, Total	59900	UG/L	5.6	1.0
		Manganese, Total	65.6	UG/L	0.10	1.0
	And the second	Sodium, Total	1820000	UG/L	382	20.0
•	* · · · · · · · · · · · · · · · · · · ·	Nickel, Total	198	UG/L	0.90	1.0
		Antimony, Total	8.0	OG/L	2.2	1.0
		Vanadium, Total	1.1	UG/L	0.70	1.0
		Zinc, Total	39.2	UG/L	0.40	1.0

#### INORGANICS DATA SUMMARY REPORT 08/29/02

CLIENT: TNUHANFORD F02-009 H1845 WORK ORDER: 11343-606-001-9999-00 LVL LOT #: 0207L262

UG/L

10.1

		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		•	REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
_======		+======================================			=========	
-005	B153H2	Silver, Total	1.4	UG/L	0.50	1.0
		Aluminum, Total	8.0 u	UG/L	8.0	1.0
		Barium, Total	46.9	UG/L	0.10	1.0
		Beryllium, Total	0.10 u	UG/L	0.10	1.0
		Calcium, Total	3050	UG/L	37.0	1.0
		Cadmium, Total	0.30 u	UG/L	0.30	1.0
	1	Cobalt, Total	4.7	UG/L	0.70	1.0
*		Chromium, Total	3.6	UG/L	0.50	1.0
		Copper, Total	2.5	UG/L	0.30	1.0
		Iron, Total	280	UG/L	14.5	. 1.0
•		Mercury, Total	0.10 u	UG/L	0.10	1.0
		Potassium, Total	6890000	UG/L	11700	20.0
		Magnesium, Total	60700	UG/L	5.6	1.0
		Manganese, Total	72.4	UG/L	0.10	1.0
		Sodium, Total	1860000	UG/L	382	20.0
•		Nickel, Total	201	UG/L	0.90	1.0
		Antimony, Total	6.5	ΩG/Γ	2.2	1.0
	•	Vanadium, Total	1.3	UG/L	0.70	1.0

Zinc, Total

#### INORGANICS DATA SUMMARY REPORT 08/29/02

CLIENT: TNUHANFORD F02-009 H1845 WORK ORDER: 11343-606-001-9999-00

ORD F02-009 H1845 LVL LOT #: 0207L262

			•			REPORTING	DILUTION
SAMPLE	SITE ID		ANALYTE	RESULT	UNITS	LIMIT	FACTOR
#=====		=====		THE EXTENS	=====		=======
-006	B153H3	100	Silver, Total	0.50 u	UG/L	0.50	1.0
	1.0		Aluminum, Total	11.7	UG/L	8.0	1.0
			Barium, Total	46.4	UG/L	0.10	1.0
			Beryllium, Total	0.10 u	UG/L	0.10	1.0
	- 1		Calcium, Total	2940	UG/L	. 37.0	1.0
			Cadmium, Total	0.30 u	UG/L	0.30	1.0
			Cobalt, Total	4.3	UG/L	0.70	1.0
			Chromium, Total	1.9	UG/L	0.50	1.0
			Copper, Total	1.6	UG/L	0.30	1.0
	*		Iron, Total	105	UG/L	14.5	1.0
	•		Mercury, Total	0.10 u	UG/L	0.10	1.0
			Potassium, Total	6700000	UG/L	11700	20.0
			Magnesium, Total	60600	UG/L	5.6	1.0
	•	2.4	Manganese, Total	65.1	UG/L	0.10	1,0
			Sodium, Total	1810000	UG/L	382	20.0
·	, t .		Nickel, Total	199	UG/L	0.90	1.0
			Antimony, Total	4.8	UG/L	2.2	1.0
	Alternative Control of		Vanadium, Total	0.80	UG/L	0.70	1.0
	Annual Control		Zinc. Total	29.6	UG/L	0.40	1.0

#### INORGANICS METHOD BLANK DATA SUMMARY PAGE 08/29/02

CLIENT: TNUHANFORD F02-009 H1845 WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION
SAMPLE	222222222222222					
BLANK1	02L0483-MB1	Silver, Total	0.50 u	UG/L	0.50	1.0
		Aluminum, Total	75.5	UG/L	8.0	1.0
		Barium, Total	0.27	UG/L	0.10	1.0
		Beryllium, Total	0.23	UG/L	0.10	1.0
		Calcium, Total	37.0 u	UG/L	37.0	1.0
٠		Cadmium, Total	0.30 u	UG/L	0.30	1.0
		Cobalt, Total	0.70 u	UG/L	0.70	1.0
	i de la companya de l	Chromium, Total	0.66	UG/L	0.50	1.0
		Copper, Total	0.30 u	UG/L	0.30	1.0
		Iron, Total	14.5 u	UG/L	14.5	1.0
		Potassium, Total	27.8	UG/L	20.4	1.0
		Magnesium, Total	5.7	UG/L	5.6	1.0
		Manganese, Total	0.28	UG/L	0.10	1.0
		Sodium, Total	65.8	UG/L	2.7	1.0
		Nickel, Total	0.90 u	UG/L	0.90	1.0
		Antimony, Total	2.4	UG/L	2.2	1.0
		Vanadium, Total	0.70 u	UG/L	0.70	1.0
		Zinc, Total	7.4	UG/L	0.40	1.0
. *	t all of					
BLANK1	02C0251-MB1	Mercury, Total	0.10 u	UG/L	0.10	1.0

#### INORGANICS ACCURACY REPORT 08/29/02

CLIENT: TNUHANFORD F02-009 H1845

LVL LOT #: 0207L262

WORK ORDER: 11343-606-001-9999-00

* .	The second second		SPIKED	INITIAL	spiked		DILUTION
SAMPLE	SITE ID	ANALYTE	SAMPLE	RESULT	AMOUNT	*RECOV	FACTOR (SPK)
======		******			=====		254
-001	B153F8	Mercury, Total	0.96	0.10u	1.0	95.7	1.0

#### INORGANICS ACCURACY REPORT 08/29/02

CLIENT: TNUHANFORD F02-009 H1845 WORK ORDER: 11343-606-001-9999-00

			SPIKED	INITIAL	SPIKED	·	DILUTION
Sample	SITE ID	ANALYTE	SAMPLE	RESULT	AMOUNT	%RECOV	Factor (SPK)
	**************	=======================================	======	======	=====	======	
-002	B153F9	Silver, Total	55.7	1.9	50.0	107.6	1.0
		Aluminum, Total	2110	45.2	2000	103.0	1.0
	•	Barium, Total	1870	46.8	2000	91.0	1.0
		Beryllium, Total	49.9	0.10u	50.0	99.8	1.0
•		Calcium, Total	27400	2950	25000	97.9	1.0
		Cadmium, Total	51.5	0.30u	50.0	103.0	1.0
i.,		Cobalt, Total	521	3.9	500	103.4	1.0
		Chromium, Total	203	3.2	200	99.7	1.0
		Copper, Total	257	3.0	250	101.8	1.0
		Iron, Total	1080	94.4	1000	98.7	1,0
		Potassium, Total	6720000	6660000	25000	263.9*	20.0
		Magnesium, Total	81000	58000	25000	91.9	1.0
		Manganese, Total	570	64.3	500	101.1	1.0
		Sodium, Total	1830000	1800000	25000	122.1*	20.0
		Nickel, Total	672	193	500	95.9	1.0
	$\mathbf{r} = \mathbf{r}^{2} \cdot \mathbf{r} = \mathbf{r}^{2} \cdot \mathbf{r}^{2} $	Antimony, Total	532	5.8	500	105.2	1.0
		Vanadium, Total	504	0.87	500	100.7	1.0
		Zinc, Total	572	19.4	500	110.6	1.0

### INORGANICS PRECISION REPORT 08/29/02

CLIENT: TNUHANFORD F02-009 H1845 WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	initial Result	REPLICATE	RPD	DILUTION FACTOR (REP)
======			======		======	
-001RBP	B153F8	Silver, Total	0.50u	0.50u	NC	1.0
		Aluminum, Total	8.0 u	8.0 u	NC	1.0
		Barium, Total	0.90	1.1	20.0	1.0
4		Beryllium, Total	0.10u	0.10u	NC	1.0
		Calcium, Total	156	102	41.9	1.0
		Cadmium, Total	0.30u	0.30u	NC	1.0
1	The second second	Cobalt, Total	0.70u	0.70u	NC	1.0
		Chromium, Total	1.1	0.50u	NC 200 LA OT	1.0
٠.		Copper, Total	1.5	1.1	30.8 M8/29/07	1.0
		Iron, Total	14.5 u	14.5 u	NC V	1.0
		Mercury, Total	0.10u	0.10u	ИC	1.0
		Potassium, Total	586 u	586 u	NC	1.0
	$\frac{1}{4} \left( \frac{x}{x} - \frac{x}{x} \right) = \frac{x}{4} \left( \frac{x}{x} - \frac{x}{x} \right)$	Magnesium, Total	36.3	10.4	110.9	1.0
		Manganese, Total	0.70	0.57	20.5	1.0
1 1		Sodium, Total	459	450	2.0	1.0
,		Nickel, Total	0.90u	0.90u	NC	1.0
		Antimony, Total	2.2 u	2.2 u	NC	1.0
		Vanadium, Total	0.70u	0.70u	NC	1.0
		Zinc, Total	13.7	4.5	101.1	1.0

#### INORGANICS LABORATORY CONTROL STANDARDS REPORT 08/29/02

CLIENT: TNUHANFORD F02-009 H1845

	WORK	ORDER:	11343-606-001-9999-00
--	------	--------	-----------------------

			SPIKED	SPIKED		
SAMPLE	SITE ID	ANALYTE	SAMPLE	TRUOMA	UNITS	%RECOV
	====================================		=====			
LCS1	02L0483-LC1	Silver, LCS	494	500	UG/L	98.8
		Aluminum, LCS	5150	5000	UG/L	103.0
•		Barium, LCS	5080	5000	UG/L	101.6
		Beryllium, LCS	260	250	UG/L	104.1
		Calcium, LCS	26000	25000	UG/L	104.1
	•	Cadmium, LCS	260	250	UG/L	104.1
		Cobalt, LCS	2540	2500	UG/L	101.6
	r r	Chromium, LCS	513	500	UG/L	102.5
		Copper, LCS	1240	1250	UG/L	99.4
		Iron, LCS	5020	5000	UG/L	100.3
		Potassium, LCS	25500	25000	UG/L	102.2
		Magnesium, LCS	25500	25000	UG/L	101.8
		Manganese, LCS	782	750	UG/L	104.3
		Sodium, LCS	24300	25000	UG/L	97.1
		Nickel, LCS	2080	2000	UG/L	103.8
	The second second	Antimony, LCS	3020	3000	nc/r	100.8
	X .	Vanadium, LCS	2550	2500	UG/L	101.8
	•	Zinc, LCS	1010	1000	UG/L	100.8
•						
LCS1	02C0251-LC1	Mercury, LCS	5.4	5.0	UG/L	107.8

<b>V</b>
<b>1</b>
and the second of the second o
Andrew of makes to some
Laboratory Use Only
Tamper Resistant Seal w.  1) Present on Outer Package or N
2) Unbroken on Oute Package or N 3) Present on Samp
od or N 4) Unbroken on Sample or N

\_\_\_\_\_\_

FH-Central Platea	y Project	CI	IAIN OF CUS	TODY/SA	MPLÈ	ANALY	/SIS F	REQUEST		F02-0	009-001	Page 1 of	
Collector GA Thomas, MA Bacchler		Compa	inv.Contact Vright	Telephon 373-39	e No.		1	Project Coordin TRENT, SJ	hash- 1 .	ice Code	7N	Data Turni 45 D	
roject Designation ModuTank - Annual Sampling	g of Purgewater		ing Location ewater Storage and Tre	eatment Facility	,			SAF No. F02-009	Ai	r Quality		<del></del>	ays
Ice Chest No. SE	e ospe	Field I	nghook No. HNF-N-314	1	COA 117546ES	10		Method of Shir Federal Expr					
Shipped To EBERLINE SERVICES (Fon	merly TMA)	Offsite	Property No.	9r/51-12-4	) <b>L</b>			Bill of Lading	/Air Bill No.	SE	<u> </u>	\$P=	·
Possible sample haza	RDS/REMARKS			COO! 4C							l Inton If		
**ifistorical Data indicates the total activity and therefore do	at samples are less than , not require a RCF rad so	2000 pCi/g creen for off-	Preservation	to pH <2	Cnol 4C	Cool 4C	HNO3 to <2 BG		HNO3 to pH <2	HNO3 to pH <2 P	HINO3 to pH <2 y		<u> </u>
sin shipment Special Handling and/or S	toraga		Type of Container	aGs*	аG	au	· BU.		<u> </u>	1			<u> </u>
Director Chimming and the S	m age		No. of Container(s	, ,	2	4	1			2			
			Volume	20mL	1000mL	1000mL	500m	L 1000mL	1000mL	1000mL	1000mL		
		·		VOA + 8260A (TCL)	Semi-VOA - R2TOA (TCL	Pesticides - 10%; Herbicides -	ICP Met 6010A (1 Mercur	AL),	Americiam-24	Gross Bei	Strontium- 89,90 Tota Sr	4	
	SAMPLE ANAL	YSIS		A-C	DE	N150A	7470 - (4 Isotop Pluton	ćV); pic		47	77.2		
		. *				14	1				1/25%		
Sample No.	Matrix *	Sample Date	Sample Time								5		
B153F8	WATER	7/25/0	2 0650	×	×	X	x						<b></b>
B453F9	WATER	- 1/ 1/2	5/02										<del> </del>
B153H0	WATER		5/02										
B159H1	WATER-		5/02										
B153H2	WATER		5/02										1
CHAIN OF POSSESSIO		Sign/Pri	nt Names			ECIAL INST	TRUCTI	ONS					Matrix *
Relinquished By/Removed From Cives Thomas Fil.			ored in EQC	Date/Time 0	710		·	×					S=Soil SE=Sediment SO=Solid
Religionshed By/Removed From	ER CDate/Time	• b	ored in	Date/Time				- :					SI=Sludge W = Water O=Dil A=Air
Relinquipped By Removed From	Date/Time	Received By/SI		Date/Time	0								DS=Deum Solk DL=Deum Liqu T=Tissue
Relinquished By/Removed From	Date/Time	Received By/St		Date/Time	`		· . •						WieWips L=Liquid V=Vegetation
Relinquished By/Removed From	Date/Time	Received By/S	rored in	Date/Tilne									X-Other
Relinquished By/Removed From	Date/Time	Received By/S	lored in	Date/Time		* .	•						
LABORATORY Received I	3 <b>y</b>				Title							Date/Time	
FINAL SAMPLE Disposal N	dethod			· · · · · · · · · · · · · · · · · · ·		Di	isposed By	y				Date/Time	
المسلم المسلم	<u> </u>					<u></u>				<del></del>			

Commany Co CS Wright Sampling Lo Purgewate Field Loghor HNF Offsite Pron	t neation or Storage and Treat onk No N.: 314 1 nerty No.	Telephone 373-399 Iment Facility Turb 7-21-07	COA 117546ES1			Protect Coordin TRENT, SJ SAF No. F02-009 Method of Shion Federal Expres Bill of Lading/	Ai nent	r Quality			naround Days
Purgewate Field Logho HNF Offsite Pron	or Storage and Treat ink No. -N. 314 1 nerty No.	7H57-22-07	COA 117546ES1			F02-009 Method of Shim Federal Expre	nent is				yays ———
HNF Offsite Pron	- N.: 314 1 nerty No.	60014L	117546ES1		·	Federal Expre	s				
/g nff-		60014L	. Pc	2018	5	Bill of Lading/A	lir Bill No.	س	<u> </u>		
off-	Preservation			/				<u> </u>	E O	SPC	·
**		HCI <del>an Hange</del> to pH ≤2 <del>Com</del>	Conl 4C		FINO3 to <2		HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2		
1	pe of Container	aGs*	яG	aG	аG	P	Р	P	Р	· · · · · · · · · · · · · · · · · · ·	
No.						L 1000mL	1000mL	1000mL	1000mL		
	Volume							G Aleba	Standling		<b></b>
		(LCL)	77-E	#081; Herhicides - #150A	6010A (T Merciir 7470 - (C Isotop Plistoni	AL); y - SV); ic	Americium-24	Gross Beta	89,90 Total Sr		
ple Date	Sample Time										
7/25/02											
	0855	x	_x	Y	×					`	<u> </u>
3	0920	ĸ	大	×	K				<u> </u>		
	0750	x	x	Υ	¥						4
	1025	y.'	У	X	<b>&gt;</b>		<u> </u>	1	<u> </u>		
ign/Print Nan				TAL INSTR	UCTIO	DNS			. ** 		Matrix '
Fills	Eff. 115	ate/Time	5								S=Soil SE=Sedimor SO=Selid S1=Sindge W = Water O=Oll A=Air DS=Daim S DL=Daim L
ved By/Stored In									2.3		T=Tismo W!=Wipe L=Limid
verl By/Stored In	Ď	late/Time			٠						V=Vogetation X=Other
ved By/Stored In	Ď	ate/Time						<u> </u>			
		Tit	fle	•						Date/Time	4
				Dispo	sed By					Date/Time	
	ple Date  7(25/02  /25/02  /25/02  /25/02  /25/02  Sign/Print Natived By/Stored in  Factor By/Stored in  ved By/Stored in  ved By/Stored in  ved By/Stored in	7(25/02   25/02   25/02   25/02   25/02   2720   25/02	Type of Container  No. of Container(s)  Volume  VOA - 8260A (TCL)  A - C  ple Date  Sample Time  7(25/c2  /25/c2  /25/	Type of Container	Type of Container  No. of Container(s)  Volume  VOA - 8250A  VOA - 8270A (TCL)  827	Type of Container   3	Type of Container   3   2   4   1   1	Type of Container No. o	Type of Container   No. of Con	Type of Container   1	Type of Container   No. of Con

FH-Central Plateau Project	CF	IAIN OF CUST	ODY/S	AMPLE	ANALYS	IS	RÉ	QUE	ST_		FO:	2-009-002	Page 1	of 1
Collector GA Thomas, MA Baechler	Compa	nv Contact Vright	Telenho 373-3	ne No.			Proje	ct Coo VT, SJ		Pr	ice Code	7N	Dáta Tur	naround Days
Project Designation ModuTank - Annual Sampling of Purgewater	Sampli Purg	ng Location ewater Storage and Trea	tment Facili	ty			SAF F02-0		. ا	Ai	r Quality	у 🗆	45 1	)ays
Ice Chest No. SEEOSPA	Field I.	nghook No. JF - N. 314		COA 117546ES1	10		Fe	od of S deral Ex	press			_		
Shinned To ERERLINE SERVICES (Formerly TMA)	Offsite	Property No.	Ab	7-018	<u> </u>		Bill	of Ladi	ng/Air I	Bill No.		FEE	051	
POSSIBLE SAMPLE HAZARDS/REMARKS								٠.					1	·
**Historical Data indicates that samples are less than 2000 p total activity and therefore do not require a RCF rad screen p	oCi/g for off-	Preservation	HCI to pH <2 Cont 4C aGs*				_	<u> </u>	_ -	· · · · · · · · · · · · · · · · · · ·			<b></b>	
site shipment. Special Handling and/or Storage.	•	Type of Container		<b>_</b>			$\perp$				ļ		4	<del> </del>
C00146C		No. of Container(s)	1			<u> </u>	$\rightarrow$	· ·	_ _				<del></del>	
		Volume	40m1.			·						, î		
			VÓA - 8260A (TCL)				·							
SAMPLE ANALYSIS			AC											
Sample No. Matrix * S.	ample Date	Sample Time								y transfer	E S			
B153H4 WATER	7/25/0	2 0700	X	engeliki ing Abana		er indys	200							
									_			<u></u>	ļ. ·	
	·			<u> </u>	-	•		<del></del>		<del></del>			-	
					<b></b>	<u>.</u>				<del></del>		<del>-  </del>		
CHAIN OF POSSESSION	Sign/Prin	t Names		SPE	CIAL INSTRUC	CTIC	ONS	<del></del>						Matrix *
Religiostical By Removed From ER & Directime 1 466 Re	ceived By/Sto	TOTAL ALLA	ate/Time   7 =	2 800					**		`.			S=Shil SE=Schment SO=Solid SI=Shidge W = Water
Den 2x 726 1910 1	cerved By/Sin	726.0		2										O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tisnic
Refinquished By/Removed From Date/Time Re	cerved By/Sto	renth U	hte/Time						•					WI=Wipe L=Liquid V=Vegetation
Relinquished By/Removed From Date/Time Re	ceived By/Sto	red in E	)ate/Time							·				X=Other
Relinquished By/Removed From Date/Fine Re	ceived By/Sto	red In t	ate/Time		,									
LABORATORY Received By SECTION				ritle		-							Date/Time	
FINAL SAMPLE Disposal Method DISPOSITION			-		Disposed	i By							Date/Time	

## LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

CLIENT:

HANFAR

Purchase Order/Project:

DATE: 7-2602

SAF#/SOW#/Release #: FOR - 009

Laboratory SDG #:

02076262

1.	Custody seals on coolers or shipping	□ X es	□ N <sub>0</sub>	□ N/A	☐ see Comment #
	container intact, signed and dated?				Journal of the Contro
2.	Outside of coolers or shipping containers are free from damage?	DVes .	□ No	□ N/A	☐ see Comment #
	. 10				
3.	Airbill # recorded?	. DYes	□ No	□ N/A	□ see Comment
4.	other client specific: historical data,	DYes	□ No	□ N/A	☐ see Comment
	alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)				
5.	Sample containers are intact?	12 Yes	□ N <sub>0</sub>	□ N/A	D see Comment
6.	Custody seals on sample containers intact, signed and dated?	DYes	□ No	□ N/A	☐ see Comment
7	All samples on coc received?	1.			
	An samples on coeffectived:	☑ Yes	□ No	□ N/A	☐ see Comment
8.	All sample label information matches coc?	□ Yes	□ N <sub>0</sub>	□ N/A	☐ see Comment
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	□ Yes	D No	CINIA	D see Comment
10	China and and I camela A and				
10.	Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	ØYes	□ No	O N/A	☐ see Comment
11,	Where applicable, bar code labels are affixed to coc?	□ Yes	□ No	ETN/A	See Comment
	anixed to coc?				
12.	coc signed and dated?	-년 Yes	□ No	□ N/A	☐ see Comment
13.	coc faxed or emailed to client?	□ Yes	□ No	□ N/A	□ see Comment
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	□ Yes	□ No	□ N/A	🛘 see Comment

Cooler # / temp and Comments:

441 45 224 29 96.064 47 02.007 42 96-018 25

421

Laboratory Sample Custodian:

Laboratory Project Manager:

V. Her S



September 12, 2002

Mr. Steve Trent Fluor Hanford, Inc. 825 Jadwin Avenue Richland, WA 99352

Reference: P.C

P.O. #630

Eberline Services R2-07-105-7314, SDG H1845

Dear Mr. Trent:

Enclosed is the data report for six water samples designated under SAF No. F02-009 received at Eberline Services on July 29, 2002. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion

Molin Mann

Program Manager

MCM

Enclosure: Data Package

Analytical Services 2030 Wright Avenue P.O. Box 4040 Richmond, California 94804-0040 (510) 235-2633 Fax (510) 235-0438 Toll Free (800) 841-5487 www.eberlineservices.com

Page 1 of 1

#### 1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H1845 was composed of six water samples designated under SAF No. F02-009 with a Project Designations of: ModuTank Annual Sampling of Purgewater

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist.

#### 2.0 ANALYSIS NOTES

#### 2.1 Gross Alpha and Gross Beta Analyses

Due to the high salt concentrations in the water samples, aliquots (0.01 L) had to be decreased in order to reduce the dissolved solids on the counting planchets (maximum of 250 mg). No other problems were encountered during the course of the analyses.

#### 2.2 **Tritium Analyses**

The LCS and method blank were not scaled to the nominal aliquot of 0.01 L. No problems were encountered during the course of the analyses.

#### 2.3 **Total Strontium Analyses**

No problems were encountered during the course of the analyses.

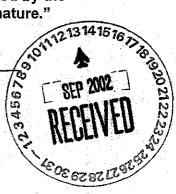
#### 2.4 Americium-241 Analyses

Due to the high salt concentrations in the water samples, aliquots (0.05 L) had to be reduced in order to perform the Am-241 analysis. No other problems were encountered during the course of the analyses.

#### **Case Narrative Certification Statement**

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Melissa C. Mannion Program Manager



SDG 7314 Contact Melissa C. Mannion Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG\_H1845</u>

# SUMMARY DATA SECTION

TABLE OF	CONTENTS
71	-
About this section	<u> </u>
Sample Summaries	3
Prep Batch Summary	5
Work Summary	6
Method Blanks	
Lab Control Samples	9
Duplicates	10
Matrix Spikes	. 11
Data Sheets	12
Method Summaries	• • • 18
Report Guides	28
End of Section	• • • • 42

Mulso Marmo Prepared by

Melini Mann

Reviewed by

SAMPLE DELIVERY GROUP H1845

SDG 7314
Contact Melissa C. Mannion

# REPORT GUIDE

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG H1845</u>

#### ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

#### SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

#### PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

#### WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

#### METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

#### LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

Page 1

SAMPLE DELIVERY GROUP H1845

SDG 7314 Contact Melissa C. Mannion

GUIDE, cont.

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG\_H1845</u>

## ABOUT THE DATA SUMMARY SECTION

#### DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

#### MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

## DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

#### METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

## REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

REPORT GUIDES
Page 2
SUMMARY DATA SECTION
Page 2

SAMPLE DELIVERY GROUP H1845

SDG 7314 Contact Melissa C. Mannion

# SAMPLE SUMMARY

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG H1845</u>

CLIENT SAMPLE ID	LOCATION		MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
B153F8	Purge. Storage	& Treat.	WATER		R207105-06	F02-009	F02-009-001	07/25/02 06:50
B153F9	Purge. Storage	& Treat.	WATER		R207105-01	F02-009	F02-009-001	07/25/02 08:55
B153H0	Purge. Storage	& Treat.	WATER		R207105-02	F02-009	F02-009-001	07/25/02 09:20
B153H1	Purge. Storage	& Treat.	WATER		R207105-03	F02-009	F02-009-001	07/25/02 09:50
B153H2	Purge. Storage	& Treat.	WATER	~	R207105-04	F02-009	F02-009-001	07/25/02 10:25
B153H3	Purge. Storage	& Treat.	WATER		R207105-05	F02-009	F02-009-001	07/25/02 10:55
Method Blank			WATER		R207105-08	F02-009		
Lab Control Sample			WATER		R207105-07	F02-009		
Duplicate (R207105-03)	Purge. Storage	& Treat.	WATER		R207105-09	F02-009	•	07/25/02 09:50
Spike (R207105-03)	Purge. Storage	& Treat.	WATER		R207105-10	F02-009	. :	07/25/02 09:50

SAMPLE SUMMARY
Page 1
SUMMARY DATA SECTION
Page 3

SAMPLE DELIVERY GROUP H1845

SDG 7314
Contact Melissa C. Mannion

# QC SUMMARY

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG N1845</u>

QC BATCH	CHAIN OF	CLIENT SAMPLE ID		MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED COLL		DEPARTMENT SAMPLE ID
7314	F02-009-001	B153F8		WATER		5.0 L		07/29/02 4	R207105-06	7314-006
		B153F9		WATER		5.0 L		07/29/02 4	R207105-01	7314-001
		<b>8153H</b> 0	4.0	WATER		5.0 L		07/29/02 4	R207105-02	7314-002
		в153н1		WATER		5.0 L .	ų.	07/29/02 4	R207105-03	7314-003
		в153н2		WATER		5.0 L		07/29/02 4	R207105-04	7314-004
		в153н3		WATER	4	5.0 L	:	07/29/02 4	R207105-05	7314-005
<u>~.</u>		Method Blank		WATER		···			R207105-08	7314-008
	•	Lab Control Sample		WATER					R207105-07	7314-007
		Duplicate (R207105-03)		WATER	1	5.0 L		07/29/02 4	R207105-09	7314-009
		Spike (R207105-03)	a <sup>*</sup>	WATER		5.0 L		07/29/02 4	R207105-10	7314-010

QC SUMMARY
Page 1
SUMMARY DATA SECTION
Page 4

SAMPLE DELIVERY GROUP H1845

SDG 7314 Contact Melissa C. Mannion

# PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG H1845

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	CLIENT MORE	— PLANCHETS RE BLANK			G MS/ORIG	QUALI- FIERS
•	a Spectros WATER	copy Americium 241 in Water	7036-178	5.0	6	1	1	1/1		
Beta SR	Counting WATER	Total Strontium in Water	7036-178	10.0	6	1	1	1/1	4	
Gas I 93A	Proportion WATER	al Counting Gross Alpha in Water	7036-178	20.0	6	1	1	1/1		
93B	WATER	Gross Beta in Water	7036-178	15.0	6	1	.1	1/1		
Lîqui H	id Scintil WATER	lation Counting Tritium in Water	7036-178	10.0	6	1	1	1/1	1/1	х

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.

Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

PREP BATCH SUMMARY
Page 1
SUMMARY DATA SECTION
Page 5

SAMPLE DELIVERY GROUP H1845

SDG 7314 Contact Melissa C. Mannion

# WORK SUMMARY

Client <u>Hanford</u> Contract No. 630 Case no SDG H1845

<b>)</b>	MATRIX	LAB SAMPLE ID COLLECTED	<u></u>		SUF-		. DELIZERE	nv	METHOD	
SAF No		RECEIVED	PLANCHET	TEST	FIX	ANALYZED	KENTEMEN	ВТ	METHOD	
		R207105-06	7314-006	93A/93		09/10/02	09/12/02	MCM	Gross Alpha in	Water
& Treat.	WATER	07/25/02	7314-006	93B/93		09/10/02	09/12/02	MCM	Gross Beta in W	later
F02-009		07/29/02	7314-006	AM		09/05/02	09/12/02	MCM	Americium 241 i	n Water
			7314-006	. Н		09/11/02	09/12/02	MCM	Tritium in Wate	er
		• .	7314-006	SR		09/10/02	09/12/02	MCM	Total Strontium	in Water
·		R207105-01	7314-001	93A/93		09/10/02	09/12/02	мсм	Gross Alpha in	Water
& Treat.	WATER		7314-001	93B/93		09/10/02	09/12/02	MCM	Gross Beta in N	later .
			7314-001	АМ		09/05/02	09/12/02	MCM	Americium 241	in Water
			7314-001	Н		09/11/02	09/12/02	MCM	Tritium in Wate	∍r
			7314-001	SR		09/10/02	09/12/02	MCM	Total Strontium	ı in Water
		R207105-02	7314-002	93A/93		09/11/02	09/12/02	мсм	Gross Alpha in	Water
& Treat.	WATER					09/10/02	09/12/02	MCM	Gross Beta in l	later
400						09/05/02	1.5	MCM	Americium 241	in Water
.02 007		,,		Н		09/11/02		MCM	Tritium in Wate	∍r
			<b>7</b> 314-002	SR		09/10/02	09/12/02	MCM	Total Strontium	n in Water
		R207105-03	7314-003	93A/93	<del></del> -	09/11/02	09/12/02	MCM	Gross Alpha in	Water
& Treat.	WATER	*	2.4			09/10/02		MCM	•	the state of the s
and the second second				*			The second of th	MCM	Americium 241	in Water
	* * * * * *		7314-003	H		09/11/02	09/12/02	MCM	Tritium in Wate	er e
			7314-003	SR				MCM	Total Strontium	n in Water
		R207105-04	7314-004	93A/93		09/10/02	09/12/02	мсм	Gross Alpha in	Water
& Treat.	WATER							мсм		
4.0				AM		09/05/02		MCM	Americium 241	n Water
		,	7314-004	Н		09/11/02	09/12/02	MCM	4 1	
	•	1	7314-004	SR.		09/10/02	09/12/02	MCM	Total Strontium	n in Water
		R207105-05	7314-005	93A/93		09/10/02	09/12/02	мсм	Gross Alpha in	Water
& Treat.	WATER					· · · · · ·		MCM		
				AM				MCM		
:-:			7314-005	Н		09/11/02	09/12/02	MCM		
			7314-005	SR		09/10/02		MCM	Total Strontium	
	SAF No & Treat.	MATRIX SAF No  & Treat. WATER F02-009  & Treat. WATER F02-009  & Treat. WATER F02-009  & Treat. WATER F02-009  & Treat. WATER F02-009	SAF No RECEIVED  R207105-06 R207105-06 R702-009 07/29/02  R207105-01 R207105-01 R702-009 07/29/02  R207105-02 R207105-02 R207105-02 R207105-03 R207105-03 R207105-03 R207105-03 R207105-03 R207105-04 R207105-04 R207105-04 R207105-04 R207105-04 R207105-04 R207105-04 R207105-04 R207105-04 R207105-04 R207105-04 R207105-04 R207105-05 R207105-05	MATRIX COLLECTED RECEIVED PLANCHET  R207105-06 7314-006  Treat. WATER 07/25/02 7314-006  Treat. WATER 07/25/02 7314-006  R207105-01 7314-001  R207105-01 7314-001  R207105-02 7314-001  R207105-02 7314-001  R207105-02 7314-001  R207105-02 7314-002  R207105-02 7314-002  R207105-03 7314-002  R207105-03 7314-002  R207105-03 7314-002  R207105-03 7314-002  R207105-04 7314-003  R207105-04 7314-003  R207105-04 7314-003  R207105-04 7314-004  R207105-04 7314-004  R207105-04 7314-004  R207105-04 7314-004  R207105-05 7314-004  R207105-05 7314-004  R207105-05 7314-005  R207105-05 7314-005  R207105-05 7314-005  R207105-05 7314-005  R207105-05 7314-005  R207105-05 7314-005  R207105-05 7314-005  R207105-05 7314-005  R207105-05 7314-005  R207105-05 7314-005  R207105-05 7314-005  R207105-05 7314-005	MATRIX COLLECTED RECEIVED PLANCHET TEST  R207105-06 7314-006 93A/93 Treat. WATER 07/25/02 7314-006 AM 7314-006 SR  R207105-01 7314-001 93A/93 Treat. WATER 07/25/02 7314-001 93B/93 F02-009 07/29/02 7314-001 AM 7314-001 H 7314-001 SR  R207105-02 7314-001 H 7314-001 SR  R207105-02 7314-002 93B/93 F02-009 07/29/02 7314-002 SR  R207105-02 7314-002 SR  R207105-03 7314-002 SR  R207105-03 7314-002 SR  R207105-03 7314-003 SR  R207105-03 7314-003 SR  R207105-04 7314-003 H 7314-003 SR  R207105-04 7314-003 SR  R207105-04 7314-003 SR  R207105-04 7314-004 P3B/93 F02-009 07/29/02 7314-004 AM 7314-004 SR  R207105-05 7314-004 SR  R207105-05 7314-004 SR  R207105-05 7314-004 SR  R207105-05 7314-004 SR  R207105-05 7314-004 SR  R207105-05 7314-004 SR  R207105-05 7314-005 P3B/93 F02-009 07/29/02 7314-005 P3B/93 F02-009 07/29/02 7314-005 AM 7314-005 H	SAF No RECEIVED PLANCHET TEST FIX  R207105-06 7314-006 93A/93 F02-009 07/25/02 7314-006 AM F02-009 07/29/02 7314-006 AM F02-009 07/29/02 7314-001 93A/93  R207105-01 7314-001 93B/93 F02-009 07/29/02 7314-001 AM F02-009 07/29/02 7314-001 AM F02-009 07/29/02 7314-001 AM F02-009 07/29/02 7314-002 93B/93 F02-009 07/29/02 7314-002 AM F02-009 07/29/02 7314-002 AM F02-009 07/29/02 7314-002 AM F02-009 07/29/02 7314-003 SR  R207105-03 7314-003 SR  R207105-04 7314-003 93B/93 F02-009 07/29/02 7314-003 AM F02-009 07/29/02 7314-004 SR  R207105-04 7314-004 SR  R207105-04 7314-004 SR  R207105-04 7314-004 SR  R207105-05 7314-004 SR  R207105-06 7314-004 SR  R207105-07/25/02 7314-004 SR  R207105-07/25/02 7314-004 SR  R207105-07/25/02 7314-004 SR  R207105-07/25/02 7314-004 SR  R207105-07/25/02 7314-004 SR  R207105-07/25/02 7314-004 SR  R207105-07/25/02 7314-005 SR  R207105-07/25/02 7314-005 SR  R207105-07/25/02 7314-005 SR  R207105-07/25/02 7314-005 SR  R207105-07/25/02 7314-005 SR  R207105-07/25/02 7314-005 SR  R207105-07/25/02 7314-005 SR  R207105-07/25/02 7314-005 SR  R207105-07/25/02 7314-005 SR  R207105-07/25/02 7314-005 SR  R207105-07/25/02 7314-005 SR	MATRIX   COLLECTED   RECEIVED   PLANCHET   TEST   FIX   ANALYZED	SAF NO RECEIVED PLANCHET TEST FIX ANALYZED REVIEWED  R207105-06 7314-006 93A/93 09/10/02 09/12/02 F02-009 07/29/02 7314-006 AM 09/05/02 09/12/02 F02-009 07/29/02 7314-006 AM 09/05/02 09/12/02 F02-009 07/29/02 7314-006 AM 09/05/02 09/12/02 F02-009 07/29/02 7314-001 93A/93 09/10/02 09/12/02 F02-009 07/29/02 7314-001 93B/93 09/10/02 09/12/02 F02-009 07/29/02 7314-001 AM 09/05/02 09/12/02 F02-009 07/29/02 7314-001 AM 09/05/02 09/12/02 F02-009 07/29/02 7314-001 SR 09/10/02 09/12/02 F02-009 07/29/02 7314-001 SR 09/10/02 09/12/02 F02-009 07/29/02 7314-002 P3A/93 09/10/02 09/12/02 F02-009 07/29/02 7314-002 P3A/93 09/10/02 09/12/02 F02-009 07/29/02 7314-002 P3A/93 09/10/02 09/12/02 F02-009 07/29/02 7314-002 AM 09/05/02 09/12/02 F02-009 07/29/02 7314-003 P3A/93 09/10/02 09/12/02 F02-009 07/29/02 7314-004 P3A/93 09/10/02 09/12/02 F02-009 07/29/02 7314-004 P3A/93 09/10/02 09/12/02 F02-009 07/29/02 7314-004 P3A/93 09/10/02 09/12/02 F02-009 07/29/02 7314-004 P3B/93 09/10/02 09/12/02 F02-009 07/29/02 7314-004 P3B/93 09/10/02 09/12/02 F02-009 07/29/02 7314-004 P3B/93 09/10/02 09/12/02 F02-009 07/29/02 7314-004 PM 09/05/02 09/12/02 F02-009 07/29/02 7314-005 P3A/93 09/10/02 09/12/02	NATRIX   COLLECTED   PLANCHET   TEST   FIX   ANALYZED   REVIEWED   BY	MATRIX   COLLECTED   PLANCHET   TEST   FIX   ANALYZED   REVIEWED   BY   METHOD

WORK SUMMARY Page 1 SUMMARY DATA SECTION Page 6

SAMPLE DELIVERY GROUP H1845

SDG 7314 Contact Melissa C. Mannion

# WORK SUMMARY, cont.

Client <u>Hanford</u> Contract No. 630 Case no SDG H1845

CLIENT SAMPLE ID LOCATION CUSTODY SAF No	MATRIX	LAB SAMPLE ID COLLECTED RECEIVED	PLANCHET	 TEST	SUF- FIX		REVIEWED	ВҮ	METHOD
Method Blank		R207105-08	7314-008	93A/93		09/10/02	09/12/02	мсм	Gross Alpha in Water
	WATER		7314-008	93B/93		09/10/02	09/12/02	MCM	Gross Beta in Water
F02-009			7314-008	AM		09/05/02	09/12/02	MCM	Americium 241 in Water
4 · 4			7314-008	H .	•	09/11/02	09/12/02	MCM	Tritium in Water
			7314-008	SR		09/10/02	09/12/02	MCM	Total Strontium in Water
Lab Control Sample	<del></del>	R207105-07	7314-007	 93A/93		09/11/02	09/12/02	MCM	Gross Alpha in Water
	WATER		7314-007	938/93	-	09/11/02	09/12/02	MCM	Gross Beta in Water
F02-009	.*		7314-007	 AM		09/05/02	09/12/02	MCM	Americium 241 in Water
		•	7314-007	Н	•	09/11/02	09/12/02	MCM	Tritium in Water
· · · · · · · · · · · · · · · · · · ·			7314-007	SR		09/10/02	09/12/02	MCM	Total Strontium in Water
Duplicate (R207105-03)		R207105-09	7314-009	93A/93		09/11/02	09/12/02	MCM	Gross Alpha in Water
Purge, Storage & Treat.	WATER	07/25/02	7314-009	93B/93		09/11/02	09/12/02	MCM	Gross Beta in Water
F02-009		07/29/02	7314-009	AM		09/05/02	09/12/02	MCM	Americium 241 in Water
:		•	7314-009	Н		09/11/02	09/12/02	MCM	Tritium in Water
			7314-009	 SR		09/10/02	09/12/02	MCM	Total Strontium in Water
Spike (R207105-03)		R207105-10	7314-010	Н	:	09/11/02	09/12/02	MCM	Tritium in Water
Purge. Storage & Treat. F02-009		07/25/02 07/29/02	÷ .						

TEST	SAF No	COUNTS (	OF TESTS BY SA	MPLE TYPE CLIENT MORE	RE BLANK	LCS	DUP SPIKE	TOTAL
93A/93	F02-009	Gross Alpha in Water	900.0 ALPHABETA_GPC	6	1	. 1	1	9
938/93	F02-009	Gross Beta in Water	900.0_ALPHABETA_GPC	6	1	1	1	9
AM	F02-009	Americium 241 în Water	AMCMISO_IE_PLATE_AEA	6	1	1	1	. 9
Н	F02-009	Tritium in Water	906.0_H3_LSC	6	1	1	1 1	10
SR	F02-009	Total Strontium in Water	SRTOT_SEP_PRECIP_GPC	6	1	1	1	9
TOTALS				30	5	5	5 1	46

WORK SUMMARY Page 2 SUMMARY DATA SECTION Page 7

R207105-08

# METHOD BLANK

Method Blank

SD	J 7314	Client/Case no	Hanford	SDG H1845
Contac	Melissa C. Mannion	Contract	No. 630	<u>-</u>
Lab sample i	d <u>R207105-08</u>	Client sample id	Method Blank	
Dept sample i	i <u>7314-008</u>	Material/Matrix		WATER
		SAF No	F02-009	

ANALYTE	CAS NO	RESULT 20 ERR pCi/L (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	0.334 0.54	0.83	3.0	Ū	93A
Gross Beta	12587-47-2	0.078 1.1	1.8	4.0	υ	93B
Tritium	10028-17-8	<u>-11.1</u> 9.1	16	400	Ū	H
Total Strontium	SR-RAD	-0.169 0.23	0.52	2.0	ָּט ,	SR
Americium 241	14596-10-2	0 0.47	1.8	1.0	U	AM

ModuTank-Annual Sampl. of Purgewater

QC-BLANK 42516

METHOD BLANKS
Page 1
SUMMARY DATA SECTION
Page 8

SAMPLE DELIVERY GROUP H1845

R207105-07

# LAB CONTROL SAMPLE

Lab Control Sample

SDG 7314	Client/Case no <u>Hanford</u>	SDG H1845
Contact Melissa C. Mannion	Case no No. 630	<del>_</del>
Lab sample id <u>R207105-07</u>	Client sample id Lab Control Sample	
Dept sample id <u>7314-007</u>	Material/Matrix	WATER
	SAF No <u>F02-009</u>	

ANALYTE	RESULT pCi/L	2ø ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	30 LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	63.0	4.7	1.1	3.0		93A	71.3	2.9	88	71-129	80-120
Gross Beta	74.0	3.7	2.6	4.0	:	93B	78.3	3.1	95	77-123	80-120
Tritium	230	16	16	400	J	н (	234	9.4	98	81-119	80-120
Total Strontium	45.9	1.9	0.63	2.0	•	SR	45.0	1.8	102	82-118	80-120
Americium 241	194	17	1.6_	1.0		AM	210	8.4	92	85-115	80-120

ModuTank-Annual Sampl. of Purgewater

ŀ					
£	00 100 /054	E			
•	QC-LCS 4251	2			
ŀ		-			

LAB CONTROL SAMPLES
Page 1
SUMMARY DATA SECTION
Page 9

SAMPLE DELIVERY GROUP H1845

R207105-09

DUPLICATE

B153H1

SDG 7314		Client/Case no <u>Hanford</u> <u>SDG H1845</u>
Contact Melissa C. Mannion	•	Case no No. 630
DUPLICATE	ORIGINAL	
Lab sample id <u>R207105-09</u>	Lab sample id <u>R207105-03</u>	Client sample id <u>B153H1</u>
Dept sample id <u>7314-009</u>	Dept sample id <u>7314-003</u>	Location/Matrix Purge. Storage & Treat. WATER
	Received <u>07/29/02</u>	Collected/Volume 07/25/02 09:50 _ 5.0 L
		Custody/SAF No <u>F02-009-001</u> <u>F02-009</u>

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD %	3σ PRO TOT LIMI
Gross Alpha	42.9	120	100	3.0	U	93A	96.9	74	97	U	-	
Gross Beta	5980	180	66	4.0		93B	6220	190	78		4	32
Tritium	6430	230	160	400		н	6490	230	160		1	23
Total Strontium	-0.062	0,45	0.91	2.0	U	SR	0.211	0.42	0.82	U	· -	
Americium 241	0	0.65	2.5	1.0	U ·	.AM	0	0.49	1.9	° U		

ModuTank-Annual Sampl. of Purgewater

•		
QC-DUP#3 42517		

DUPLICATES
Page 1
SUMMARY DATA SECTION
Page 10

SAMPLE DELIVERY GROUP H1845

R207105-10

MATRIX SPIKE

B153H1

SDG 7314

Contact Melissa C. Mannion

MATRIX SPIKE

Lab sample id <u>R207105-10</u>

Dept sample id <u>7314-010</u>

ORIGINAL

Lab sample id <u>R207105-03</u>

Dept sample id <u>7314-003</u>

Received <u>07/29/02</u>

Client/Case no <u>Hanford</u>

SDG H1845

Case no <u>No. 630</u>

Client sample id B153H1

Location/Matrix Purge. Storage & Treat. WATER

Collected/Volume 07/25/02 09:50 5.0 L

Custody/SAF No F02-009-001 F02-009

ANALYTE	SPIKE pCi/L	2σ ERR (COUNT)		RDL pCi/L	QUALI- FIERS		ADDED pCi/L	2σ ERR pCi/L	ORIGINAL pCi/L	2σ ERR (COUNT)	REC 30 LMTS % (TOTAL)	
Tritium	24000	420	160	400	Х	н	18200	730	6490	230	96 78-122	60-140

ModuTank-Annual Sampl. of Purgewater

QC-MS#3 42518

MATRIX SPIKES
Page 1
SUMMARY DATA SECTION
Page 11

Lab id TMANC
Protocol Hanford
Version Ver 1.0

Form DVD-MS

Version 3.06

Report date 09/12/02

R207105-06

DATA SHEET

B153F8

	,	7314 Melissa C. Mannion	Client/Case no Contract	
	Lab sample id		Client sample id	
ļ	Dept sample id	<u>7314-006</u>	Location/Matrix	Purge. Storage & Treat. WATER
1	Received	07/29/02	Collected/Volume	07/25/02 06:50 5.0 L
1			Custody/SAF No	F02-009-001 F02-009

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	0.055	0.36	0.70	3.0	U	93A
Gross Beta	12587-47-2	-0.633	1.1	1.9	4.0	υ	93B
Tritium	10028-17-8	23.3	95	160	400	Ū	H
Total Strontium	SR-RAD	-0.105	0.25	0.54	2.0	U.	SR
Americium 241	14596-10-2	O'	0.53	2.0	1.0	<b>U</b>	AM

ModuTank-Annual Sampl. of Purgewater

DATA SHEETS
Page 1
SUMMARY DATA SECTION
Page 12

R207105-01

# DATA SHEET

B153F9

SDG	7314	Client/Case no	Hanford	SDG H1845
Contact	Melissa C. Mannion	Contract	No. 630	
Lab sample id	R207105-01	Client sample id	B153F9	<u> </u>
Dept sample id	7314-001	Location/Matrix	Purge. Storage & Tre	at. WATER
Received	07/29/02	Collected/Volume	07/25/02 08:55 5.	<u>0 L</u>
		Custody/SAF No	F02-009-001 F02-	009_

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	80.6	120	95	3.0	υ	93A
Gross Beta	12587-47-2	6340	180	60	4.0		93B
Tritium	10028-17-8	6480	230	160	400		H
Total Strontium	SR-RAD	-0.201	0.24	0.53	2.0	υ	ŞR
Americium 241	14596-10-2	0.261	1.0	2.0	1.0	U	AM

ModuTank-Annual Sampl. of Purgewater

DATA SHEETS
Page 2
SUMMARY DATA SECTION
Page 13

R207105-02

# DATA SHEET

B153H0

	SDG 7314	Client/Case no	<u> Hanford</u>	SDG_H1845
Conta	act <u>Melissa C. Ma</u>	nnion Contract	No. 630	
Lab sample	id <u>R207105-02</u>	Client sample id	B153H0	
Dept sample	id <u>7314-002</u>	Location/Matrix	<u>Purge. Storage</u>	& Treat. WATER
Recei	ved <u>07/29/02</u>	Collected/Volume	07/25/02 09:20	5.0 L
		Custody/SAF No	F02-009-001	F02-009

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	61.1	79	130	3.0	ប	93A
Gross Beta .	12587-47-2	6280	180,	66	4.0		93B
Tritium	10028-17-8	6350	230	160	400		H
Total Strontium	SR-RAD	0.021	0.24	0.50	2.0	บ	SR
Americium 241	14596-10-2	0	1.3	2.5	1.0	U	АМ

ModuTank-Annual Sampl. of Purgewater

DATA SHEETS
Page 3
SUMMARY DATA SECTION
Page 14

R207105-03

# DATA SHEET

B153H1

	SDG <u>7</u> Contact <u>M</u>	7314 Melissa C. Mannion	Client/Case no Contract		SDG_H1845
	Lab sample id ${ ilde { m E}}$		Client sample id		<u> </u>
1	Dept sample id 7	7314-003	Location/Matrix	Purge. Storage & T	reat. WATER
l	Received <u>O</u>	37/29/02	Collected/Volume	07/25/02 09:50	<u>5.0 Г</u>
ļ			Custody/SAF No	F02-009-001 F0	<u>2-009</u>

		RESULT 2σ EF		MDA	RDL	QUALI-	
ANALYTE	CAS NO	pCi/L	(COUNT)	pCi/L	pCi/L	FIERS	TEST
Gross Alpha	12587-46-1	96.9	74	97	3.0	U	93A
Gross Beta	12587-47-2	6220	190	78	4.0		93B
Tritium	10028-17-8	6490	230	160	400		H
Total Strontium	SR-RAD	0.211	0.42	0.82	2.0	υ	SR
Americium 241	14596-10-2	0	0.49	<u>1.9</u>	1.0	υ	AM

ModuTank-Annual Sampl. of Purgewater

DATA SHEETS
Page 4
SUMMARY DATA SECTION
Page 15

R207105-04

# DATA SHEET

B153H2

		7314 Melissa C. Mannion	Client/Case no Contract	
	Lab sample id	R207105-04	Client sample id	<del></del>
1	Dept sample id	7314-004	Location/Matrix	Purge. Storage & Treat. WATER
1	Received	07/29/02	Collected/Volume	07/25/02 10:25 5.0 L
1			Custody/SAF No	F02-009-001 F02-009

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	-16.3	89	99	3.0	Ū	93A
Gross Beta	12587-47-2	5620	180	92	4.0		93B
Tritium	10028-17-8	6420	230	160	400		H
Total Strontium	SR-RAD	-0.221	0.24	0.55	2.0	υ	SR
Americium 241	14596-10-2	0.245	0.98	1.9	1.0	U	AM

ModuTank-Annual Sampl. of Purgewater

DATA SHEETS
Page 5
SUMMARY DATA SECTION
Page 16

R207105-05

DATA SHEET

B153H3

SDG	7314	Client/Case no	<u> Hanford</u>	SDG H1845
Contact	Melissa C. Mannion	Contract	No. 630	
Lab sample id	R207105-05	Client sample id	B153H3	
Dept sample id	7314-005		Purqe. Storage & Trea	at. WATER_
Received	07/29/02	Collected/Volume		<u>) L</u>
		Custody/SAF No	F02-009-001 F02-0	<u>009_</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	22.9	120	100	3.0	U	93A
Gross Beta	12587-47-2	6280	180	80	4.0		93B
Tritium	10028-17-8	6440	230	160	400		H
Total Strontium	SR-RAD	0.019	0.24	0.50	2.0	ប	SR
Americium 241	14596-10-2	-0.524	0.53	2.0	1.0	ΰ	MA

ModuTank-Annual Sampl. of Purgewater

DATA SHEETS
Page 6
SUMMARY DATA SECTION
Page 17

SAMPLE DELIVERY GROUP H1845

Test AM Matrix WATER
SDG 7314
Contact Melissa C. Mannion

# METHOD SUMMARY

AMERICIUM 241 IN WATER
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H1845

RESULTS

CLIENT SAMPLE ID		SUF- T FIX PLANCHET	Americium 241						
Preparation batch 7036-	178							-	
B153F8	R207105-06	7314-006	U ·				100		
B153F9	R207105-01	7314-001	· U		1.				
В153НО	R207105-02	7314-002	U				-		
B153H1	R207105-03	7314-003	บ						
B153H2	R207105-04	7314-004	U .						
В153н3	R207105-05	7314-005	U					-	
BLK (QC ID=42516)	R207105-08	7314-008	U						
LCS (QC ID=42515)	R207105-07	7314-007	ok	-	* .				
Duplicate (R207105-03)	R207105-09	7314-009	- U						
Nominal values and limi ModuTank-Annual Sampl.	· · · · · · · · · · · · · · · · · · ·	RDLs (pCi/L)	1.0			<del> </del>			

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB RAW SI SAMPLE ID TEST F	•	ALIQ	PREP FAC	DILU- TION	YIELD %		- 1		IFT DAYS	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7036-	178 2 <i>σ</i> prep erro	~ 5.0 % R	eference	Lab N	otebool	c. 7036	pg. 178	3					
B153F8	R207105-06	2.0	0.0500		100	75	1	20		42	09/05/02	09/05	SS-048
B153F9	R207105-01	2.0_	0.0500			82	. 1	116		42	09/05/02	09/05	SS-042
в 153но	R207105-02	2.5	0.0500	•		61	1	20 -		42	09/05/02	09/05	SS-043
в153н1	R207105-03	1.9_	0.0500			77	. 1	120		42	09/05/02	09/05	SS-044
B153H2	R207105-04	1.9	0.0500			77	1	120	-	42	09/05/02	09/05	SS-045
B153H3	R207105-05	2.0	0.0500			76	· 1	20		42	09/05/02	09/05	SS-047
BLK (QC ID=42516)	R207105-08	1.8	0.0500		-	82	. 1	120			09/05/02	09/05	SS-055
LCS (QC ID=42515)	R207105-07	1.6	0.0500			89	i	21			09/05/02	09/05	SS-050
Duplicate (R207105-03)	R207105-09	2.5	0.0500			61	1	21		42	09/05/02	09/05	ss-056
(QC ID=42517)					* .						is the second		
Nominal values and limi	ts from method	1.0	0.0500			20-10	5. 1	100	100	180			

METHOD SUMMARIES
Page 1
SUMMARY DATA SECTION
Page 18

SAMPLE DELIVERY GROUP H1845

Test AM Matrix WATER SDG 7314

Contact Melissa C. Mannion

# METHOD SUMMARY, cont.

AMERICIUM 241 IN WATER ALPHA SPECTROSCOPY

Client	Bant	ford		 	
Contract	No.	630	· .	 ·	
Contract	SDG	H184	5		
	7.				

PROCEDURES REFERENCE AMCMISO\_IE\_PLATE\_AEA CP-963 Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 3 CP-008 Heavy Element Electroplating, rev 7

AVERAGES ± 2 SD MDA 2.0 ± 0.60 FOR 9 SAMPLES YIELD 76 ± 19

METHOD SUMMARIES Page 2 SUMMARY DATA SECTION Page 19

SAMPLE DELIVERY GROUP H1845

Test <u>SR</u> Matrix <u>WATER</u>
SDG <u>7314</u>
Contact <u>Melissa C. Mannion</u>

# METHOD SUMMARY TOTAL STRONTIUM IN WATER BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H1845

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID		SUF- FIX PLANCHET	Total Strontium						•
Preparation batch 7036-	178									
B153F8	R207105-06		7314-006	u						4
B153F9	R207105-01		7314-001	u ·						
B153H0	R207105-02		7314-002	U			. "			· · · · · ·
B153H1	R207105-03		7314-003	U	•		•	÷		, X
B153H2	R207105-04		7314-004	U .						
B153H3	R207105-05	:	7314-005	U		-				
BLK (QC ID=42516)	R207105-08		7314-008	U						
LCS (QC ID=42515)	R207105-07		7314-007	ok				-	1.1	
Duplicate (R207105-03)	R207105-09		7314-009	- <i>U</i>						
Nominal values and limit ModuTank-Annual Sampl.	and the second second		RDLs (pCi/L)	2.0						

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCi/L	ALIQ l	PREP FAC		YIELD %	EFF %	COUNT min			PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7036-1	78 2 <i>σ</i> pr	ep err	or 10	)_0 % R	eference	Lab I	lotebool	c 7036	pg.	178	 				
B153f8	R207105-06			0.54	0.500			97	•	100		47	09/10/02	09/10	GRB-206
B153F9	R207105-01			0.53	0.500			96		100		47	09/10/02	09/10	GRB-201
B153H0	R207105-02			0.50	0.500			97		100		47	09/10/02	09/10	GRB-202
в153н1	R207105-03			0.82	0.300			98		1,00		47	09/10/02	09/10	GRB-203
B153H2	R207105-04			0.55	0.500			91		100		47	09/10/02	09/10	GRB-204
в153Н3	R207105-05			0.50	0.500			96		100		47	09/10/02	09/10	GRB-205
BLK (QC ID=42516)	R207105-08			0.52	0.500			96		100			09/10/02	09/10	GRB-207
LCS (QC ID=42515)	R207105-07			0.63	0.500		•	96	٠.	100			09/10/02	09/10	GRB-207
Duplicate (R207105-03)	R207105-09		•	0.91	0.300		· · · :	99		100		47	09/10/02	09/10	GRB-208
(QC ID=42517)		4						-							
Nominal values and limit	s from metho			2.0	0.500	_				100	 	180			

METHOD SUMMARIES
Page 3
SUMMARY DATA SECTION
Page 20

SAMPLE DELIVERY GROUP H1845

Test <u>SR</u> Matrix <u>WATER</u> SDG 7314

Contact Melissa C. Mannion

# METHOD SUMMARY, cont.

TOTAL STRONTIUM IN WATER BETA COUNTING

Client	<u> Hanford</u>
Contract	No. 630
Contract	SDG_H1845

PROCEDURES REFERENCE SRTOT\_SEP\_PRECIP\_GPC

CP-501 Strontium in Water Samples, rev 4

AVERAGES ± 2 SD MDA 0.61 ± 0.30 FOR 9 SAMPLES YIELD 96 ± 4

METHOD SUMMARIES
Page 4
SUMMARY DATA SECTION
Page 21

SAMPLE DELIVERY GROUP H1845

Test <u>93A</u> Matrix <u>WATER</u> SDG <u>7314</u>

Contact Melissa C. Mannion

## METHOD SUMMARY

GROSS ALPHA IN WATER
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG H1845

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW S	SUF~ FIX PLANCHET	Gross	Alpha		1.		
Preparation batch 7036-	178								
B153F8	R207105-06	93	7314-006	Ū	A		٠		
B153F9	R207105-01	93	7314-001	80.6	IJ				
В153Н0	R207105-02	93	7314-002	61.1	U	*			
B153H1	R207105-03	93	7314-003	96.9	U				
B153H2	R207105-04	93	7314-004	໌ ປ					•
в153н3	R207105-05	93	7314-005	22.9	U			s.	
BLK (QC 1D=42516)	R207105-08	93	7314-008	. <b>U</b>					
LCS (QC ID=42515)	R207105-07	93	7314-007	ok				 	
Duplicate (R207105-03)	R207105-09	93	7314-009	-	U		•		
Nominal values and limi ModuTank-Annual Sampl.			RDLs (pCi/L)	3.0					

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCī/L	ALIQ L	PREP FAC		RESID mg		COUNT min				PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7036-	178 2 <i>σ</i> pr	ep er	ror 20	0.0 % Re	eference	Lab	Notebool	k 7036	pg.	178						4
B153F8	R207105-06	93		0.70	0.300			4		100			47	09/09/02	09/10	GRB-111
B153F9	R207105-01	93		95	0.0100			226		100			47	09/09/02	09/10	GRB-101
В153Н0	R207105-02	93		130	0.0100			224		100			48	09/09/02	09/11	GRB-115
B153H1	R207105-03	93		97	0.0100			226		100			48	09/09/02	09/11	GRB-116
B153H2	R207105-04	93		99	0.0100			216		100			47	09/09/02	09/10	GRB-114
в153н3	R207105-05	93		100	0.0100		11.	228		100			47	09/09/02	09/10	GRB-110
BLK (QC ID=42516)	R207105-08	93		0.83	0.300			21	1	1.00				09/09/02	09/10	GRB-109
LCS (QC ID=42515)	R207105-07	93		1.1	0.300			22		100				09/09/02	09/11	GRB-114
Duplicate (R207105-03)	R207105-09	93		100	0.0100			220		100			48	09/09/02	09/11	GRB-102
(QC ID=42517)			• .								•	•				
Nominal values and limi	ts from metho	d		3.0	0.300	•		5-25	0	100			180			

METHOD SUMMARIES

Page 5

SUMMARY DATA SECTION

Page 22

SAMPLE DELIVERY GROUP H1845

Test 93A Matrix WATER SDG 7314\_ Contact Melissa C. Mannion

# METHOD SUMMARY, cont.

GROSS ALPHA IN WATER GAS PROPORTIONAL COUNTING

Client	Hanford	
Contract	No. 630	
Contract	SDG H1845	<del></del>

PROCEDURES REFERENCE

900.0\_ALPHABETA\_GPC

CP-120

Gross Alpha and Gross Beta in Water, rev 5

AVERAGES ± 2 SD MDA <u>69</u> ± <u>100</u> FOR 9 SAMPLES RESIDUE 154 ± 208

METHOD SUMMARIES Page 6 SUMMARY DATA SECTION Page 23

SAMPLE DELIVERY GROUP H1845

Test <u>93B</u> Matrix <u>WATER</u> SDG <u>7314</u>

Contact Melissa C. Mannion

# METHOD SUMMARY

GROSS BETA IN WATER
GAS PROPORTIONAL COUNTING

Client <u>Hanford</u> Contract <u>No. 630</u>

Contract SDG H1845

RESULTS

CLIENT SAMPLE ID	SAMPLE ID	TEST FI	X PLANCHET	Gross	Beta		e e e e e e e e e e e e e e e e e e e		
Preparation batch 7036-	178						1		
в153F8	R207105-06	93	7314-006	U	•		*		
B153F9	R207105-01	93	7314-001	6340					
B153H0	R207105-02	93	7314-002	6280					
в153н1	R207105-03	93	7314-003	6220					
в153н2	R207105-04	93	7314-004	5620			*		
В153Н3	R207105-05	93	7314-005	6280					
BLK (QC ID=42516)	R207105-08	93	7314-008	U					
LCS (QC ID=42515)	R207105-07	93	7314-007	ok		•	* *	•	
Duplicate (R207105-03)	R207105-09	93	7314-009	ok					
Nominal values and limi ModuTank-Annual Sampl.			RDLs (pCi/L)	4.0		<del>-</del>			

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-	MDA pCi/L	ALIQ L	PREP FAC	DILU-	RESID		COUNT min			PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7036-	1 <b>7</b> 8 2 <i>σ</i> pr	ep er	ror 1	5.0 % Re	eference	Lab i	loteboo	k 7036	pg.	178					P .
B153F8	R207105-06	93		1.9	0.300			4		100		47	09/09/02	09/10	GRB-111
B153F9	R207105-01	93		60	0.0100			226		100		47	09/09/02	09/10	GRB-101
B153H0	R207105-02	93		66	0.0100		÷	224	-	100	ŧ	47	09/09/02	09/10	GRB-102
В153Н1 -	R207105-03	93		78	0.0100			226		100		47	09/09/02	09/10	GRB-105
B153H2	R207105-04	93		92	0.0100			216		100		47	09/09/02	09/10	GRB-114
в153н3	R207105-05	93		80	0.0100			228		100		47	09/09/02	09/10	GRB-110
BLK (QC ID=42516)	R207105-08	93		1.8	0.300		•	21		100			09/09/02	09/10	GRB-109
LCS (QC ID=42515)	R207105-07	93		2.6	0.300			22		100			09/09/02	09/11	GRB-114
Duplicate (R207105-03)	R207105-09	93		_66	0.0100			220		100		48	09/09/02	09/11	GRB-102
(QC ID=42517)		1													

METHOD SUMMARIES
Page 7
SUMMARY DATA SECTION
Page 24

SAMPLE DELIVERY GROUP H1845

Test <u>93B</u> Matrix <u>WATER</u> SDG 7314

Contact Melissa C. Mannion

# METHOD SUMMARY, cont.

GROSS BETA IN WATER
GAS PROPORTIONAL COUNTING

<u>Han</u>	ford		
No.	630		
SDG	H1845		
	No.	Hanford No. 630 SDG H1845	No. 630

PROCEDURES REFERENCE

FERENCE 900.0\_ALPHABETA\_GPC

CP-120

Gross Alpha and Gross Beta in Water, rev 5

 AVERAGES ± 2 SD
 MDA
 50
 ±
 74

 FOR 9 SAMPLES
 RESIDUE
 154
 ±
 208

METHOD SUMMARIES
Page 8
SUMMARY DATA SECTION
Page 25

SAMPLE DELIVERY GROUP H1845

Test H Matrix WATER SDG 7314 Contact Melissa C. Mannion

# METHOD SUMMARY

TRITIUM IN WATER LIQUID SCINTILLATION COUNTING

Client Hanford Contract No. 630 Contract SDG H1845

RESULTS

CLIENT SAMPLE ID		EST FIX	PLANCHET	Tritium							
Preparation batch 7036-1	78				· · · · · · · · · · · · · · · · · · ·						
B153F8	R207105-06		7314-006	U			. *				**
B153F9	R207105-01		7314-001	6480				5.			
в153Н0	R207105-02		7314-002	6350							
B153H1	R207105-03	,	7314-003	6490		•	:		١.		
в153H2	R207105-04		7314-004	6420							
в153Н3	R207105-05		7314-005	6440		•					
BLK (QC ID=42516)	R207105-08		7314-008	ប							
LCS (QC ID=42515)	R207105-07		<b>7314-</b> 007	ok J			•				
Duplicate (R207105-03)	R207105-09		7314-009	ok		•	4.5				
Spike (R207105-03)	R207105-10		7314-010	ok	X		1 1			1.5	

ModuTank-Annual Sampl. of Purgewater

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCi/L	5	PREP FAC	DILU- TION	YIELD %	EFF %				100	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7036-	178 2 <i>σ</i> pr	ep er:	ror 10	0.0 %	Reference	Lab l	Notebook	7036	pg.	178						
B153F8	R207105-06			160	0.0100	-		100		120			48	09/10/02	09/11	LSC-007
B153F9	R207105-01	•		160	0.0100			100		120			48	09/10/02	09/11	LSC-007
В153НО	R207105-02			160	0.0100			100		120		: .	48	09/10/02	09/11	LSC-007
в153н1	R207105-03			160	0.0100			100		120	,		48	09/10/02	09/11	LSC-007
B153H2	R207105-04			160	0.0100			100		120			48	09/10/02	09/11	LSC-007
В153Н3	R207105-05			160	0.0100			100		120			48	09/10/02	09/11	LSC-007
BLK (QC ID=42516)	R207105-08		×	16	1.00			10		120			٠	09/10/02	09/11	LSC-007
LCS (QC ID=42515)	R207105-07			16	1.00			10		120	•			09/10/02	09/11	LSC-007
Duplicate (R207105-03) (QC ID=42517)	R207105-09			160	0.0100			100		120			.48	09/10/02	09/11	LSC-007
Spike (R207105-03) (QC ID=42518)	R207105-10			160	0.0500	. :	* e <sub>1</sub>	20		120		: :	48	09/10/02	09/11	LSC-007
Nominal values and limi	ts from metho	d		400	0,0100					25			180			,

METHOD SUMMARIES Page 9

SUMMARY DATA SECTION

Page 26

Test	H Matrix WATER
SDG	7314
Contact	Melissa C. Mannion

METHOD SUMMARY, cont.

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Client	Hanford	· ·
Contract	No. 630	
Contract	SDG H1845	 

PROCEDURES REFERENCE 9

CE 906.0\_H3\_LSC

CP-210

Tritium in Water Samples by Distillation, rev 6

AVERAGES ± 2 SD FOR 10 SAMPLES MDA <u>130</u> ± <u>120</u>

YIELD 74 ± 84

METHOD SUMMARIES
Page 10
SUMMARY DATA SECTION
Page 27

SAMPLE DELIVERY GROUP H1845

SDG 7314 Contact Melissa C. Mannion

# REPORT GUIDE

Clie	ent	Hani	ord		
Contra	act	No.	630		
Case	no	SDG	H1845		

#### SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- \* LAB SAMPLE ID is the lab's primary identification for a sample.
- \* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- \* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- \* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.
  - QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.
- \* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

Page 28

SAMPLE DELIVERY GROUP H1845

SDG 7314
Contact Melissa C. Mannion

# REPORT GUIDE

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG H1845</u>

# PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- \* The preparation batches are shown in the same order as the Method Summary Reports are printed.
- \* Only analyses of planchets relevant to the SDG are included.
- \* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- \* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

REPORT GUIDES
Page 2
SUMMARY DATA SECTION
Page 29

SAMPLE DELIVERY GROUP H1845

SDG 7314 Contact <u>Melissa C. Mannion</u>

# REPORT GUIDE

Client	Hanford	 
Contract	No. 630	
Case no	SDG H1845	

#### WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- \* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- \* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- \* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- \* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- \* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- \* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

REPORT GUIDES

Page 3

SUMMARY DATA SECTION

Page 30

SAMPLE DELIVERY GROUP H1845

SDG 7314
Contact Melissa C. Mannion

## REPORT GUIDE

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG\_H1845</u>

#### DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- \* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- \* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- \* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- \* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- \* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

REPORT GUIDES
Page 4
SUMMARY DATA SECTION
Page 31

SAMPLE DELIVERY GROUP H1845

SDG <u>7314</u> Contact <u>Melissa C. Mannion</u>

GUIDE, cont.

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG H1845</u>

## DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
- H Similar to 'L' except the recovery was high.
- P The RESULT is 'preliminary'.
- X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
- 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

\* An MDA is underlined if it is bigger than its RDL.

REPORT GUIDES

Page 5

SUMMARY DATA SECTION

Page 32

SAMPLE DELIVERY GROUP H1845

SDG 7314 Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H1845

## DATA SHEET

- \* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.
- \* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- \* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

REPORT GUIDES

Page 6

SUMMARY DATA SECTION

Page 33

SAMPLE DELIVERY GROUP H1845

SDG 7314
Contact Melissa C. Mannion

# REPORT GUIDE

Client	Hanford	
Contract	No. 630	
Case no	SDG H1845	

#### LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- \* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- \* REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- \* The first, computed limits for the recovery reflect:
  - 1. The error of RESULT, including that introduced by rounding the result prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

- 2. The error of ADDED.
- 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- \* The second limits are protocol defined upper and lower QC limits for the recovery.
- \* The recovery is underlined if it is outside either of these ranges.

REPORT GUIDES

Page 7

SUMMARY DATA SECTION

Page 34

SAMPLE DELIVERY GROUP H1845

SDG 7314 Contact Melissa C. Mannion

# REPORT GUIDE

Client	Han	ford	 	
Contract	No.	630	 	
Case no	SDG	H1845		

# DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

\* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

\* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.

If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

\* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTs. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- \* The second limit for the RPD is the larger of:
  - 1. A fixed percentage specified in the protocol.

REPORT GUIDES
Page 8
SUMMARY DATA SECTION
Page 35

SAMPLE DELIVERY GROUP H1845

SDG 7314
Contact Melissa C. Mannion

GUIDE, cont.

			100			
Clie	ent.	<u>H</u> ani	ford			
Contra	act	<u>N</u> o.	630			:
Case	no.	SDG	H1845	5	:	

## DUPLICATE

- 2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.
- \* The RPD is underlined if it is greater than either limit.
- \* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

\* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

REPORT GUIDES

Page 9

SUMMARY DATA SECTION

Page 36

SAMPLE DELIVERY GROUP H1845

SDG 7314 Contact Melissa C. Mannion

# REPORT GUIDE

Clien	t Han	ford		
Contract	t No.	630		_
Case no	SDG	H1845	 	

#### MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- \* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.
  - If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.
- \* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- \* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.
- \* The first, computed limits for the recovery reflect:
  - The errors of the two RESULTs, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

- 2. The error of ADDED.
- 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- \* The second limits are protocol defined upper and lower QC limits

REPORT GUIDES
Page 10
SUMMARY DATA SECTION
Page 37

SAMPLE DELIVERY GROUP H1845

SDG <u>7314</u>
Contact <u>Melissa C. Mannion</u>

GUIDE, cont.

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG\_H1845</u>

## MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

\* The recovery is underlined (out of spec) if it is outside either of these ranges.

REPORT GUIDES

Page 11

SUMMARY DATA SECTION

Page 38

SAMPLE DELIVERY GROUP H1845

SDG 7314
Contact Melissa C. Mannion

# REPORT GUIDE

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG H1845</u>

# METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

\* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

\* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

\* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- \* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- \* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

REPORT GUIDES
Page 12
SUMMARY DATA SECTION
Page 39

SAMPLE DELIVERY GROUP H1845

SDG 7314
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H1845

## METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- \* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
- \* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

MDAs are underlined if greater than the printed RDL.

- \* Aliquots are underlined if less than the nominal value specified for the method.
- \* Prepareation factors are underlined if greater than the nominal value specified for the method.
- \* Dilution factors are underlined if greater than the nominal value specified for the method.
- \* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
- \* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
- \* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

REPORT GUIDES

Page 13

SUMMARY DATA SECTION

Page 40

SAMPLE DELIVERY GROUP H1845

SDG 7314
Contact Melissa C. Mannion

GUIDE, cont.

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG H1845</u>

## METHOD SUMMARY

- \* Count times are underlined if less than the nominal value specified for the method.
- \* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- \* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- \* Days Held are underlined if greater than the holding time specified in the protocol.
- \* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

REPORT GUIDES
Page 14
SUMMARY DATA SECTION
Page 41

SAMPLE DELIVERY GROUP H1845

SDG 7314 Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H1845

## METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

REPORT GUIDES
Page 15
SUMMARY DATA SECTION
Page 42

FH-Central Plateau Project CHAIN OF CUST					AMPLE	ANALY	YSIS 1	REQUEST	F02-009-001 Page 1 of 2					
Collector GA Thomas, MA Baechler			any Contact Wright	Telephon 373-39				Project Coordia TRENT, SJ	ator Pi	Price Code 7N		Data Turi		
Project Designation ModuTank - Annual Samplin	g of Purgewater	Samp Pur	ling Location gewater Storage and Tre	atment Facilit	y H184	15. (73	14)	SAF No. F02-009	Ai	ir Quality		45 D	ays	
Ice Chest No. SEE	OSPC	Field	Logbook No. HNF-N-314	1	COA 117546ES			Method of Shin Federal Expre		50	v 1	4184	5	
Shipped To EBERLINE SERVICES (For	merly TMA)	Offsit	e Property No.	745 7-22-0	L			Bill of Lading/	Air Bill No. S屋		PC			
POSSIBLE SAMPLE HAZA **Historical Data indicates the	nt samples are less than		Preservation	HCI HCI to pH <2 Co	Cool 4C	Cool 4C	HNO3 to	pH None	HNO3 to pH	HNO3 to pH	HNO3 to pH			
total activity and therefore do i site shimment. Special Handling and/or S		creen for off-	Type of Container	aGs*	aG	aG	aG	P	P	P	P			
		*	No. of Container(s)	3	3	4	1	0	<u>(1)</u>	0	$\cup$			
			Volume	20mL	1000mL	1000mL	, 500m		1000mL	1000mL	1000mL			
	SAMPLE ANAL	YSIS		VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	Pesticides 8081; Herbicides 7/25	ICP Meta 6010A (Tr Mercury 7430 - (C Isagopi Plutohi	AL); (V);	Americium-24	1 Gross Alpha; Gross Beta	Strontium- 89,90 Total Sr			
Sample No.	Matrix *	Sample Date	Sample Time	18/14/20 - 15-12 TO										
B153F8	WATER	7/25/0	2 06501					X/	x/	x /	*/			
DAF9-	"-WATER-	AT 7/25												
B153H0	WATER	,,,	5/0-					,						
B153H1	WATER		502											
B153H2	WATER	1	5/02				1							
CHAIN OF POSSESSION		Sign/Prin	t Names		SPEC	IAL INSTR	RUCTIO	NS	!		· In time		Matrix *	
Relinquished By/Removed From  Grey Thom AT FU Lity Relinquished By/Removed From R. LILL P. G. h. Lieu	Date/Time	Received By/Sto		7 9.5. c	7195 -a 710		•				·		S=Soil SE=Sodiment SO=Solid SI=Sludge W = Water O=Oil	
Reliaquished By Removed From  Rof 3 A 3728 7  Reliaquished By/Removed From F	Date/Time 090	Received By/Sto	red in D	pate/Time 0 9 7. 26.2 pate/Time			T				**		A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wi=Wipe	
RCLOO Reh Hee Relinguished By/Removed From PFO BCPUTS Relinguished By/Removed From	7.26.6 2 Date/Time 12: 7-27-02 Date/Time	Received By/Sto	red in 3°4-2 D		6704				e e e		·		L-Liquid V=Vegetation X=Other	
LABORATORY Received By SECTION				Ti	tle						]	Date/Time		
FINAL SAMPLE Disposal Met DISPOSITION	hod	<del></del>		<u> </u>		Dispo	osed By					Date/Time		

FH-Central Plateau Project	L	<u> IAIN OF CUST</u>	ODY/S	AMPLE	ANAL	YSIS	REQUEST	`L	F02	009-001	Page 1	of <u>2</u>
Collector GA Thomas, MA Baechler	CS V	nv Contact Vright	Telenho 373-3	994		,	Project Coordin TRENT, SJ	nator Pi	rice Code	7N	Data Tur	
Project Designation  ModuFank - Annual Sampling of Purgewater	Sampli Purg	ng Location water Storage and Trea	H/85 atment Facili	5 (7)	314)		SAF No. F02-009	Ai	ir Quality		45 1	Days
Ice Chest No. SEEOSPC		ogbook No. NF - N - 314		COA 117546ES	.0		Method of Shin Federal Expre		50 h	H18	45	
Shipped Fo EBERLINE SERVICES (Formerly TMA)	Offsite	Property No.	-im51-)2-	or A	\$201	85	Bill of Lading/	Air Bill No.	S	VE R	ospe	
POSSIBLE SAMPLE HAZARDS/REMARKS			COOL 4C	.]	1							
**Historical Data indicates that samples are less than 2000 pCi total activity and therefore do not require a RCF rad screen for		Preservation	to pH <2	<b>-</b>	Cool 4C	HNO3 to		<2	<2	HNO3 to pH <2		
site shirment. Special Handling and/or Storage	1	Type of Container	aGs*	aG	aG	aG		P	P	P		
Cool 4°C		No. of Container(s)	3	2	7/25	02		0	0	<u>C</u>		
		Volume	20mL	1000mL	1080ml.	500m		1000mL	1000mL	1000mL	,	
			VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	Pesticides - 8081;	CP Met 60 QA (T.	AL),	Americium-241	Gross Alpha; Gross Beta	Strontium- 89,90 Total		
ŞAMPLE ANALYSIS		•			Herbicides - 8150A	Meroury 7470 - (C	×0;			Sr		
	•	· · · · · · · · · · · · · · · · · · ·				Isotopi Plutoni			•	]		
				<u> </u>	<u> </u>							
Sample No. Matrix * Samp	le Date	Sample Time										
B459F8 WATER (	T 7/2	5/02/										
	25/07						XC/	X.	Kr	×		,
B153H0 WATER ✓ 🦙	25/07						XV	R.	XV	x/		A. (4)
B153H1 WATER 7	25/07						K'	K/	K/	Χί		
B153H2 WATER /	125/0	12/ 1025/					K/	×	X/	* /		
CHAIN OF POSSESSION S	ign/Print	Names		SPEC	IAL INSTR	RUCTIO	NS					Matrix *
Relinquished By/Removed From Date/Time 12.00 Received Gren Thomas Fd. Sufflower 7/25/02. Received Thomas Fd. Sufflower 7/25/02.	ed By/Store	ed in ERC Da	ate/Time / Z	00								S=Soil SR=Sediment
Relinquished By/Removed From File Date/Time Received	od By/Store	din 7.2602 R-8	ste/Time									SC=Solid SI=Sludge
12 (All R.F. 61 beg 7-25.00	Feel	EX					•					W = Water O=Oli
	ed By Slore	dinj Di	ate/Time 12	50					*	: *		A#Air DS=Drum Solids
		A 3728 7	ate/Time of									DL=Denm Liquids T=Tissue
	ed By/Store	lan Profeshiber	~ 7-26	h s-								Wi≈Wipc L≈Liquid
Reimquished By/Removed From ER & Date/Time 09,0 Received F CLQ TECHNOLOGY	ed By/Store	din D	ite Time — 27-02-									V≈Vegetation X≈Other
Relinquished By/Removed From Date/Time 12700 Received	d By/Store	ed in SCA-2 Da	ite/Tinte 1	0774				\$ \$ \$ \$	4			T DV
	resto	* E- WAUSTA		9/62 tle							ate/Time	<u> </u>
LABORATORY Received By SECTION			11	ne :			1	a i		,	arca vinge	
FINAL SAMPLE Disposal Method DISPOSITION			<del> </del>		Dispo	sed By				E	Pate/Time	

FH-Central Plateau Project CHAIN OF					IAIN OF CUSTODY/SAMPLE ANALYSIS I						<b>QUEST</b>	'	F02-	-009-001	Page <u>2</u> of <u>2</u>		
Collector GA Thomas, MA	Baechler	ſ		ipany Co S Wright		t Telephone No. 373-3994					ect Coordin NT, SJ	ator	Price Code 7N		Data Tur		
Project Designation ModuTank - Annu		Purgewater	San F						SAF No. F02-009			Air Quality 📋		45 Days			
Ice Chest No.	SEE	OSPC	Fie	d Logboo	ok No. - N-314 1		COA 117546ES		/		nod of Ship deral Expre	ment SS	50 R	H	1845	·	
Shipped To EBERLINE SERV	VICES (Former	ly TMA)		ije Prone		1407-22-0		82018		Bill	of Lading/2	Air Bill No.	SE	K OS	PC		
**Historical Data in	indicates that se	amples are less tha		F	reservation	HCI - Dues to pH <2 ince	Cool 4C	Cool 4C	FINO3 to	o pH	None	HNO3 to pH <2	HNO3 to pH	HNO3 to pH			
total activity and the site shimment. Special Handling	Α,		screen jor ojj-	Тур	e of Container	aGs*	aG	aG	aG		P	P	P	P			
	C001			No.	of Container(s)	3 20mL	2 1000mL	25/0	21 500n	ol.	1000mL	1000mL	1000mL	1000mL			
				<u> </u>	Volume	VOA - 8260A	Semi-VOA	Pasticides -	ICP Me	,		Americium-241		Strontium			
		SAMPLE ANA	Lysis			(ICT)	8270A (TCL)	8081; Herbicides - 8150A	Morcui 7470 - V Isotor Pluton	(V);	11110111 - 113	Americanie-24	Gross Bets	89,90 Total Sr			
Sample No	0.	Matrix *	Sample Da	e	Sample Time												
B153H3		WATER 🗸	7/25	020	10551						<u>*</u>	<u> ኦ</u> /	45"	× ′			
					·.			,									
		<u></u>								$\dashv$							
													-				
SECTION	ed From FR  cd From FR  cd From FR  cd From FR  cd From FR  cd From FR  cd From FR  cd From FR  cd From FR  cd From	Date/Time / Per Date/Time / Per Date/Time / Per Date/Time Date/Time Date/Time / Per Date/Time	Received By/s  Received By/s  Received By/s  Received By/s  Received By/s  Received By/s	tored in  Hotored in  Gord in  Gord in	7. 25 Di 1728 7. 35 Di 1728 7. 3	ate/Time	10.PP	Disno	RUCTIO	DNS				<u> </u>	Date/Time Date/Time	Matrix *  5-Solt SD-Solid SIS-Studge W = Water O-Oil A=Air DB-Dram Solids DL-Dram Liquits T=Tissue Wi=Wipe L=Liquid V=Vegetation X=Other	
DISPOSITION												1					

Richmond, CA Laboratory

# SAMPLE RECEIPT CHECKLIST

	E RECEIPT						
Client: Dechtel Hanford Inc	Date/Time received 7 - 27-02 12500						
coc No. 702-009-001							
ERC 99-062 My ERC 96-	.044 /16						
Container I.D. No. Requested	TAT (Days) 45 P.O. Received Yes [ ] No [1]						
INSP	ECTION						
1. Custody seals on shipping container intac	t? Yes[/] No[] N/A[]						
<ol><li>Custody seals on shipping container date</li></ol>	d & signed? Yes [ /] No [ ] N/A [ ]						
<ol><li>Custody seals on sample containers intac</li></ol>	t? Yes[/] No[] N/A-[]						
4. Custody seals on sample containers dated & signed? Yes [ / ] No [ ] N/A [							
5. Packing material is:	Wet [ ] Dry [ /						
6. Number of samples in shipping container:							
7. Number of containers per sample: TLS	Check (Or see (Cock)						
8. Paperwork agrees with samples?	Yes [ /] No [ ]						
9. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [ ]							
10. Samples are: In good condition [ ] Le	eaking [ ] Broken Container [ ] Missing [ ]						
11. Describe any anomalies:							
13. Was P.M. notified of any anomalies? Yes	}						
14. Received by C. Marsta	Date: 7-29-02 Time: 10.00						
Customer Sample	Customer Sample						
No. cpm mr/hr wipe	No. : opm mr/hr wipe						
on Chamber Ser. No.	Calibration date						
on Chamber Ser. No.	Calibration date						